```
1 CCATGGGAGC GAACACTTCA AGAAAACCAC CAGTGTTTGA TGAAAATGAA
 51 GATGTCAACT TTGACCACTT TGAAATTTTG CGAGCCATTG GGAAAGGCAG
101 TTTTGGGGAG GTCTGCATTG TACAGAAGAA TGATACCAAG AAGATGTGCG
151 CAATGAAGTA CATGAATAAA CAAAAGTGCG TGGAGCGCAA TGAAGTGAGA
201 AATGTCTTCA AGGAACTCCA GATCATGCAG GGTCTGGAGC ACCCTTTCCT
 251 GGTTAATTTG TGGTATTCCT TCCAAGATGA GGAAGACATG TTCATGGTGG
 301 TGGACCTCCT GCTGGGTGGA GACCTGCGTT ATCACCTGCA ACAGAACGTC
 351 CACTTCAAGG AAGAAACAGT GAAGCTCTTC ATCTGTGAGC TGGTCATGGC
 401 CCTGGACTAC CTGCAGAACC AGCGCATCAT TCACAGGGAT ATGAAGCCTG
 451 ACAATATTTT ACTTGACGAA CATGGGCACG TGCACATCAC AGATTTCAAC
 501 ATTGCTGCGA TGCTGCCCAG GGAGACACAG ATTACCACCA TGGCTGGCAC
 551 CAAGCCTTAC ATGGCACCTG AGATGTTCAG CTCCAGAAAA GGAGCAGGCT
 601 ATTCCTTTGC TGTTGACTGG TGGTCCCTGG GAGTGACGGC ATATGAACTG
 651 CTGAGAGGCC GGAGACCGTA TCATATTCGC TCCAGTACTT CCAGCAAGGA
 701 AATTGTACAC ACGTTTGAGA CGACTGTTGT AACTTACCCT TCTGCCTGGT
 751 CACAGGAAAT GGTGTCACTT CTTAAAAAGC TACTCGAACC TAATCCAGAC
 801 CAACGATTTT CTCAGTTATC TGATGTCCAG AACTTCCCGT ATATGAATGA
 851 TATAAACTGG GATGCAGTTT TTCAGAAGAG GCTCATTCCA GGTTTCATTC
 901 CTAATAAAGG CAGGCTGAAT TGTGATCCTA CCTTTGAACT TGAGGAAATG
 951 ATTTTGGAGT CCAAACCTCT ACATAAGAAA AAAAAGCGTC TGGCAAAGAA
1001 GGAGAAGGAT ATGAGGAAAT GCGATTCTTC TCAGACATGT CTTCTTCAAG
1051 AGCACCTTGA CTCTGTCCAG AAGGAGTTCA TAATTTTCAA CAGAGAAAAA
1101 GTAAACAGGG ACTTTAACAA AAGACAACCA AATCTAGCCT TGGAACAAAC
1151 CAAAGACCCA CAAGGTGAGG ATGGTCAGAA TAACAACTTG TAAAGGCCTC
1201 ATGTCTTCTT CTTGGGACAA TCTCATGCCA GAAACTTCTA ATTACATATG
1251 TCAAGAAAAG CTGACAGTAG CTCCTGCCAC TCCACACACC ATGACTTAGA
1301 AAATGTGAAT GAATATATTT CAAAAAAGGC AGCACAACAC AGTGAAGGGT
1351 CCTGGGCCTG AGCTCCTGGA AAGTCATTTC ACATCAATCA ACTGTGTGAT
1451 ATGAGAGGGT TATACTAAAA AAAAAAAAAA AAAAA
  (SED NO:1)
             1 - 2
5'UTR:
Start Codon: 3
Stop Codon:
             1191
3'UTR:
             1194
Homologous proteins:
Top 10 BLAST Hits
                                                              Score
                                                                560 e-158
CRA|8700000001426 /altid=gi|7161864 /def=emb|CAB76566.1| (AJ25...
CRA|8700000001314 /altid=gi|8923754 /def=ref|NP_060871.1| gene...
                                                                557. e-157
CRA 103000001515936 /altid=gi 10946600 /def=ref NP_067277.1 hy...
                                                                    e-145
                                                                514
CRA 108000024647823 /altid=gi 12730486 /def=ref XP_003392.2 ge...
                                                                395 e-109
CRA|18000005184360 /altid=gi|7505957 /def=pir||T23688 hypotheti...
                                                                     8e-89
                                                                 328
                                                                    5e-58
CRA|18000005004115 /altid=gi|1730069 /def=sp|P54644|KRAC_DICDI ...
                                                                226
CRA|18000004912236 /altid=gi|464395 /def=sp|P28178|PK2_DICDI PR...
                                                                209
                                                                     8e-53
CRA|18000004991065 /altid=gi|1362152 /def=pir||S56639 ribosomal...
                                                                     3e-51
                                                                 204
                                                                203 6e-51
CRA|18000004952305 /altid=gi|462434 /def=sp|P34099|KAPC_DICDI C...
                                                                202 8e-51
CRA | 107000045076305 /altid=gi | 12322721 /def=gb | AAG51345.1 | AC012...
EST:
                                                        Score
                                                                1362 0.0
gi|12432521 /dataset=dbest /taxon=96...
                                                                 864 0.0
gi|12425892 /dataset=dbest /taxon=96...
                                                                 708 0.0
gi|9811536 /dataset=dbest /taxon=960...
EXPRESSION INFORMATION FOR MODULATORY USE:
gil12432521 brain hippocampus
 gi|12425892 Breast mammary adenocarcinoma cell line
 gi|9811536 Bladder carcinoma cell line
 <u>Tissue expression:</u>
 Human brain
 Human fetal brain
 Human fetal heart
 Human kidney
 Human uterus
```

```
1 MGANTSRKPP VFDENEDVNF DHFEILRAIG KGSFGEVCIV QKNDTKKMCA
  51 MKYMNKQKCV ERNEVRNVFK ELQIMQGLEH PFLVNLWYSF QDEEDMFMVV
 101 DLLLGGDLRY HLQQNVHFKE ETVKLFICEL VMALDYLQNQ RIIHRDMKPD
 151 NILLDEHGHV HITDFNIAAM LPRETQITTM AGTKPYMAPE MFSSRKGAGY
 201 SFAVDWWSLG VTAYELLRGR RPYHIRSSTS SKEIVHTFET TVVTYPSAWS
 251 QEMVSLLKKL LEPNPDQRFS QLSDVQNFPY MNDINWDAVF QKRLIPGFIP
 301 NKGRLNCDPT FELEEMILES KPLHKKKKRL AKKEKDMRKC DSSQTCLLQE
 351 HLDSVQKEFI IFNREKVNRD FNKRQPNLAL EQTKDPQGED GQNNNL
  (SEQ ID NO:2)
FEATURES:
Functional domains and key regions:
[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site
Number of matches: 2
            4-7 NTSR
      1
             43-46 NDTK
[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site
Number of matches: 7
               5-7 TSR
               6-8 SRK
         194-196 SRK
            45-47 TKK
           122-124 TVK
           193-195 SSR
               6-8 SRK
[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site
 Number of matches: 4
              33-36 SFGE
             89-92 SFQD
            212-215 TAYE
           230-233 SSKE
 [4] PDOC00008 PS00008 MYRISTYL
 N-myristoylation site
 Number of matches: 3
            2-7 GANTSR
            197-202 GAGYSF
          391-396 GQNNNL
 [5] PDOC00009 PS00009 AMIDATION
 Amidation site
            218-221 RGRR
 [6] PDOC00100 PS00107 PROTEIN_KINASE_ATP
 Protein kinases ATP-binding region signature
              29-52 IGKGSFGEVCIVQKNDTKKMCAMK
 [7] PDOC00100 PS00108 PROTEIN_KINASE_ST
 Serine/Threonine protein kinases active-site signature
             142-154 IIHRDMKPDNILL
 Membrane spanning structure and domains:
   Helix Begin End Score Certainity
1 197 217 0.690 Putative
```

```
BLAST Alignment t T p Hit:
Alignment to top blast hit:
>CRA|8700000001426 /altid=gi|7161864 /def=emb|CAB76566.1] (AJ250840)
            serine/threonine protein kinase [Mus musculus] /org=Mus
            musculus /taxon=10090 /dataset=nraa /length=414
          Length = 414
 Score = 560 bits (1428), Expect = e-158
 Identities = 278/403 (68%), Positives = 320/403 (78%), Gaps = 7/403 (1%)
 Frame = +3
            MGANTSRKPPVFDENEDVNFDHFEILRAIGKGSFGEVCIVQKNDTKKMCAMKYMNKQKCV 182
Query: 3
            MG N S KPPVFDENE+VNFDHF+ILRAIGKGSFG+VCIVQK DTKKM AMKYMNKQKCV
            MGGNHSHKPPVFDENEEVNFDHFQILRAIGKGSFGKVCIVQKRDTKKMYAMKYMNKQKCV 60
Sbjct: 1
            ERNEVRNVFKELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFKE 362
Query: 183
            ER+EVRNVF+ELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHF E
            ERDEVRNVFRELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFTE 120
 Sbjct: 61
            ETVKLFICELVMALDYLQNQRIIHRDMKPDNILLDEHGHVHITDFNIAAMLPRETQITTM 542
Query: 363
             TVKL+ICEL +AL+YLQ IIHRD+KPDNILLDEHGHVHITDFNIA +L
Sbjct: 121 GTVKLYICELALALEYLQRYHIIHRDIKPDNILLDEHGHVHITDFNIATVLKGSEKASSM 180
Query: 543 AGTKPYMAPEMFS--SRKGAGYSFAVDWWSLGVTAYELLRGRRPYHIRSSTSSKEIVHTF 716
                              G GYS+ VDWWSLGVTAYELLRG RPY I S+T EI++ F
            AGTKPYMAPE+F
 Sbjct: 181 AGTKPYMAPEVFQVYVDGGPGYSYPVDWWSLGVTAYELLRGWRPYEIHSATPIDEILNMF 240
 Query: 717 ETTVVTYPSAWSQEMVSLLKKLLEPNPDQRFSQLSDVQNFPYMNDINWDAVFQKRLIPGF 896
            + V Y S W + MVSLLKKLL +P+ R S L D+Q+ Y+ D+NWDAVF+K L+PGF
 Sbjct: 241 KVERVHYSSTWCEGMVSLLKKLLTKDPESRLSSLRDIQSMTYLADMNWDAVFEKALMPGF 300
 Query: 897 IPNKGRLNCDPTFELEEMILESKPLHKKKKRLAK-KEKDMRKCDSSQTCLLQEHLDSVQK 1073
             +PNKGRLNCDPTFELEEMILESKPLHKKKKRLAK + +D K
                                                              LQ+ L++V+K
 Sbjct: 301 VPNKGRLNCDPTFELEEMILESKPLHKKKKRLAKHRSRDSTKDSCPLNGHLQQCLETVRK 360
 Query: 1074 EFIIFNREKVNR----DFNKRQPNLALEQTKDPQGEDGQNNNL 1190
                            D + + + +DG+NNN+
             EFIIFNREK+ R
 Sbjct: 361 EFIIFNREKLRRQQGHDGQLSDLDGRIGSQTSSKLQDGRNNNI 403 (SEQ ID NO:4)
 >CRA|8700000001314 /altid=gi|8923754 /def=ref|NP_060871.1| gene for
             serine/threonine protein kinase [Homo sapiens] /org=Homo
             sapiens /taxon=9606 /dataset=nraa /length=414
           Length = 414
   Score = 557 bits (1419), Expect = e-157
   Identities = 275/403 (68%), Positives = 319/403 (78%), Gaps = 7/403 (1%)
   Frame = +3
             MGANTSRKPPVFDENEDVNFDHFEILRAIGKGSFGEVCIVQKNDTKKMCAMKYMNKQKCV 182
  Query: 3
             MG N S KPPVFDENE+VNFDHF+ILRAIGKGSFG+VCIVQK DTKKM AMKYMNKQKC+
             MGGNHSHKPPVFDENEEVNFDHFQILRAIGKGSFGKVCIVQKRDTKKMYAMKYMNKQKCI 60
  Sbjct: 1
             ERNEVRNVFKELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFKE 362
  Query: 183
             ER+EVRNVF+ELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHF E
             ERDEVRNVFRELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFTE 120
  Sbjct: 61
  Query: 363 ETVKLFICELVMALDYLQNQRIIHRDMKPDNILLDEHGHVHITDFNIAAMLPRETQITTM 542
               TVKL+ICEL +AL+YLQ IIHRD+KPDNILLDEHGHVHITDFNIA ++
  Sbjct: 121 GTVKLYICELALALEYLQRYHIIHRDIKPDNILLDEHGHVHITDFNIATVVKGAERASSM 180
  Query: 543 AGTKPYMAPEMFS--SRKGAGYSFAVDWWSLGVTAYELLRGRRPYHIRSSTSSKEIVHTF 716
                              +G GYS+ VDWWSLG+TAYELLRG RPY I S T
              AGTKPYMAPE+F
  Sbjct: 181 AGTKPYMAPEVFQVYMDRGPGYSYPVDWWSLGITAYELLRGWRPYEIHSVTPIDEILNMF 240
  Query: 717 ETTVVTYPSAWSQEMVSLLKKLLEPNPDQRFSQLSDVQNFPYMNDINWDAVFQKRLIPGF 896
              + V Y S W + MV+LL+KLL +P+ R S L D+Q+ PY+ D+NWDAVF+K L+PGF
  Sbjct: 241 KVERVHYSSTWCKGMVALLRKLLTKDPESRVSSLHDIQSVPYLADMNWDAVFKKALMPGF 300
  Query: 897 IPNKGRLNCDPTFELEEMILESKPLHKKKKRLAK-KEKDMRKCDSSQTCLLQEHLDSVQK 1073
                                                                LQ L++V++
              +PNKGRLNCDPTFELEEMILESKPLHKKKKRLAK + +D K
   Sbjct: 301 VPNKGRLNCDPTFELEEMILESKPLHKKKKRLAKNRSRDGTKDSCPLNGHLQHCLETVRE 360
   Query: 1074 EFIIFNREKVNRDFNKRQPNLALEQTKDPQG----EDGQNNNL 1190
              EFIIFNREK+ R + L + Q
                                                 +DG NNNL
   Sbjct: 361 EFIIFNREKLRRQQGQGSQLLDTDSRGGGQAQSKLQDGCNNNL 403 (SEQ ID NO:5)
```

FIGURE 2B

>CRA|103000001515936 /altid=gi|10946600 /def=ref[NP_067277.1|

hypothetical serine/threonine protein kinase [Mus musculus] /org=Mus musculus /taxon=10090 /dataset=nraa /length=488 Length = 488Score = 514 bits (1310), Expect = e-145Identities = 250/389 (64%), Positives = 304/389 (77%), Gaps = 4/389 (1%) Frame = +3Query: 18 SRKPPVFDENEDVNFDHFEILRAIGKGSFGEVCIVQKNDTKKMCAMKYMNKQKCVERNEV 197 S + PVFD+ EDVNFDHF+ILRAIGKGSFG+VCIVQK DT+KM AMKYMNKQ+C+ER+EV Sbict: 77 SARRPVFDDKEDVNFDHFQILRAIGKGSFGKVCIVQKRDTEKMYAMKYMNKQQCIERDEV 136 Query: 198 RNVFKELQIMQGLEHPFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFKEETVKL 377 RNVF+EL+I+Q +EH FLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNV F E+TV+L Sbjct: 137 RNVFRELEILQEIEHVFLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVQFSEDTVRL 196 Query: 378 FICELVMALDYLQNQRIIHRDMKPDNILLDEHGHVHITDFNIAAMLPRETQITTMAGTKP 557 +ICE+ +ALDYL++Q IIHRD+KPDNILLDE GH H+TDFNIA ++ Sbjct: 197 YICEMALALDYLRSQHIIHRDVKPDNILLDEQGHAHLTDFNIATIIKDGERATALAGTKP 256 Query: 558 YMAPEMFSS--RKGAGYSFAVDWWSLGVTAYELLRGRRPYHIRSSTSSKEIVHTFETTVV 731 YMAPE+F S G GYSF VDWWS+GV AYELLRG RPY I SS + + +V F T V Sbjct: 257 YMAPEIFHSFVNGGTGYSFEVDWWSVGVMAYELLRGWRPYDIHSSNAVESLVQLFSTVSV 316 Query: 732 TYPSAWSQEMVSLLKKLLEPNPDQRFSQLSDVQNFPYMNDINWDAVFQKRLIPGFIPNKG 911 WS+EMV+LL+KLL NP+ RFS L D+Q P + + WD + +K++ PGF+PNKG Sbjct: 317 QYVPTWSKEMVALLRKLLTVNPEHRFSSLQDMQTAPSLAHVLWDDLSEKKVEPGFVPNKG 376 Query: 912 RLNCDPTFELEEMILESKPLHKKKKRLAKKEKDMRKCDSSQT--CLLQEHLDSVQKEFII 1085 RL+CDPTFELEEMILES+PLHKKKKRLAK + DSSQ+ LQ+ LD++Q++F+I Sbjct: 377 RLHCDPTFELEEMILESRPLHKKKKRLAKNKSRDSSRDSSQSENDYLQDCLDAIQQDFVI 436 Query: 1086 FNREKVNRDFNKRQPNLALEQTKDPQGED 1172 FNREK+ KR L E P+ D Sbjct: 437 FNREKL----KRSQELMSEPPPGPETSD 460 (SEQ ID NO:6) >CRA|108000024647823 /altid=gi|12730486 /def=ref|xP_003392.2| gene for serine/threonine protein kinase [Homo sapiens] /org=Homo sapiens /taxon=9606 /dataset=nraa /length=330 Length = 330Score = 395 bits (1004), Expect = e-109Identities = 199/316 (62%), Positives = 237/316 (74%), Gaps = 7/316 (2%) Frame = +3Query: 264 YSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFKEETVKLFICELVMALDYLQNQRIIHRDM 443 YSFQDEEDMFMVVDLLLGGDLRYHLQQNVHF E TVKL+ICEL +AL+YLQ IIHRD+ Sbjct: 4 YSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFTEGTVKLYICELALALEYLQRYHIIHRDI 63 Query: 444 KPDNILLDEHGHVHITDFNIAAMLPRETQITTMAGTKPYMAPEMFS--SRKGAGYSFAVD 617 KPDNILLDEHGHVHITDFNIA ++ + ++MAGTKPYMAPE+F +G GYS+ VD Sbjct: 64 KPDNILLDEHGHVHITDFNIATVVKGAERASSMAGTKPYMAPEVFQVYMDRGPGYSYPVD 123 Query: 618 WWSLGVTAYELLRGRRPYHIRSSTSSKEIVHTFETTVVTYPSAWSQEMVSLLKKLLEPNP 797 WWSLG+TAYELLRG RPY I S T EI++ F+ V Y S W + MV+LL+KLL +P Sbjct: 124 WWSLGITAYELLRGWRPYEIHSVTPIDEILNMFKVERVHYSSTWCKGMVALLRKLLTKDP 183 Query: 798 DQRFSQLSDVQNFPYMNDINWDAVFQKRLIPGFIPNKGRLNCDPTFELEEMILESKPLHK 977 + R S L D+Q+ PY+ D+NWDAVF+K L+PGF+PNKGRLNCDPTFELEEMILESKPLHK ESRVSSLHDIQSVPYLADMNWDAVFKKALMPGFVPNKGRLNCDPTFELEEMILESKPLHK 243 Sbjct: 184 Query: 978 KKKRLAK-KEKDMRKCDSSQTCLLQEHLDSVQKEFIIFNREKVNRDFNKRQPNLALEQTK 1154 KKKRLAK + +D K LQ L++V++EFIIFNREK+ R KKKRLAKNRSRDGTKDSCPLNGHLQHCLETVREEFIIFNREKLRRQQGQGSQLLDTDSRG 303 Sbjct: 244 Query: 1155 DPQG----EDGQNNNL 1190 +DG NNNL Sbjct: 304 GGQAQSKLQDGCNNNL 319 (SEQ ID NO: 7) >CRA|18000005184360 /altid=gi|7505957 /def=pir||T23688 hypothetical protein M03C11.1 - Caenorhabditis elegans /org=Caenorhabditis elegans /taxon=6239 /dataset=nraa /length=379 Length = 379

FIGURE 2C

```
Score = 328 \text{ bits } (833), \text{ Expect = } 8e-89
 Identities = 156/353 (44%), Positives = 226/353 (63%), Gaps = 2/353 (0%)
 Frame = +3
Query: 66 HFEILRAIGKGSFGEVCIVQKNDTKKMCAMKYMNKQKCVERNEVRNVFKELQIMQGLEHP 245
            HF ++R+IG+G+FG+VCIVQ+ TKK A+KYMNK++C+E+
                                                           NV +EL ++ + HP
Sbict: 27
            HFSVIRSIGRGAFGKVCIVQERKTKKYFALKYMNKRRCIEKGVAANVIRELTLLSKMSHP 86
Query: 246 FLVNLWYSFQDEEDMFMVVDLLLGGDLRYHLQQNVHFKEETVKLFICELVMALDYLQNQR 425
            F+VNLWY+FQD + M+MV DLLLGGDLRYHL Q F E+ KL++CE+ +A++YL
Sbjct: 87
            FIVNLWYTFQDGDYMYMVSDLLLGGDLRYHLSQQGKFAEDRAKLYLCEICLAVEYLHEMK 146
Query: 426 IIHRDMKPDNILLDEHGHVHITDFNIAAMLPRETQITTMAGTKPYMAPEMFSS--RKGAG 599
            I+HRD+KP+NILLDE GH H+TD N+A L + T+ +GT+PYMAPE++++
Sbjct: 147 IVHRDIKPENILLDEQGHAHLTDLNLATQLEDDQLATSYSGTRPYMAPEIYATYLEIEDG 206
Query: 600 YSFAVDWWSLGVTAYELLRGRRPYHIRSSTSSKEIVHTFETTVVTYPSAWSQEMVSLLKK 779
                VDWW+LGV YE+LRGR P+ S T +E F + + YP+ W +++ +
Sbjct: 207 YDSRVDWWALGVCFYEMLRGRTPFEFSSRTKPEEAYVAFRESSIPYPAHWPTDLIQFINS 266
Query: 780 LLEPNPDQRFSQLSDVQNFPYMNDINWDAVFQKRLIPGFIPNKGRLNCDPTFELEEMILE 959
            +L+ + ++R L ++ Y I++ +VF+K+ P FIP K LNCOP +ELEE IL
Sbjct: 267 MLKFDKEKRLVGLEAIKKHSYTERIDFKSVFEKKPSPVFIPCKEGLNCDPMYELEERILV 326
Query: 960 SKPLHKKKKRLAKKEKDMRKCDSSQTCLLQEHLDSVQKEFIIFNREKVNRDFN 1118
                               R Q LE VKFIF+R V + N
Sbjct: 327 STPIH--RRRTNHNNSSGRSSSEPQNAALVE----VSKAFIDFSRHNVKIEPN 373 (SEQ ID NO: 8)
Hmmer search results (Pfam):
Scores for sequence family classification (score includes all domains):
Model
         Description
                                                          Score
                                                                   E-value N
PF00069 Eukaryotic protein kinase domain
                                                          241.7
                                                                      1e-68
CE00359 E00359 bone_morphogenetic_protein_receptor
                                                           18.9
                                                                   0.00012
PF00433 Protein kinase C terminal domain
                                                            8.8
                                                                       0.2
CE00022 CE00022 MAGUK_subfamily_d
                                                            8.6
                                                                      0.02
CE00203 CE00203 ERBB_RECEPTOR
                                                            6.0
                                                                       0.25
                                                                              1
CE00031 VEGFR
                                                                              1
                                                                       0.12
                                                            5.1
CE00528 CE00528 CDC14_PHOSPHATASE
                                                            1.7
CE00292 CE00292 PTK_membrane_span
                                                          -44.9
                                                                   1.9e-06
CE00287 CE00287 PTK_Eph_orphan_receptor
CE00286 E00286 PTK_EGF_receptor
CE00291 CE00291 PTK_fgf_receptor
CE00290 CE00290 PTK_Trk_family
                                                          -45.1
                                                                   2.4e-05
                                                          -59.9
                                                                   1.7e-07
                                                          -81.9
                                                                   0.00049
                                                         -158.8
                                                                   0.00022
CE00016 CE00016 GSK_glycogen_synthase_kinase
CE00288 CE00288 PTK_Insulin_receptor
                                                         -216.0
                                                                   0.00011
                                                         -225.8
                                                                      0.21
```

Parsed fo	or domail Domain	seq-f		hmm-f	hmm-t 1093	score 5.1	E-value 0.12
CE00031 CE00203 CE00359	1/1 1/1 1/1	134 136 142	168 172 191	1059 855 272	891 326	6.0 18.9 8.6	0.25 0.00012 0.02
CE00022 CE00288 CE00528	1/1 1/1 1/1	133 23 251	223 238 260	133 1 608	226 269 [] 617 .]	-225.8 1.7	0.21 8 1.9e-06
CE00292 CE00287 CE00291	1/1 1/1 1/1	23 23 23	276 276 278	1 1 1	288 [] 260 [] 285 []	-44.9 -45.1 -81.9	2.4e-05 0.00049
CE00286 CE00290 PF00069	1/1 1/1 1/1	23 23 23	278 279 281	1 1 1	263 [] 282 [] 278 []	-59.9 -158.8 241.7	1.7e-07 0.00022 1e-68
PF00433 CE00016	1/1 1/1	282 1	301 331 [.	1 1	20 [. 433 []	8.8 -216.0	0.00011

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15751 TTGGTTTATT TAGGTAGGAT TAATTTICAG TATGAATATT ATTTACACA 15801 CAAATATAGT CAGTTGAATT GCTGTGGAGG TTTCTGTACG ATTTACTCA	V A
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TOTAL ACACACACACACATC TOTTALAGGG TACACAAGGA
A A COTTOCTT CATCOANCTG GAAL IGLAAA LII UGAAUAU
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PERMIT CONTINUE CONTROLL CANTER CALLED CALLED CALLED
PEREL ACATTOMACO ACTTATOMAC ATAGTIGGIC HIAACHIICC AIGIONCINI
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ACACA ATTECTOCC CAATAATAGT TOCTAGAIGO AGIIAAIGAG COITAIIGAG
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TO THE THOUSE AT A A A COTO ATCAMO AND
36551 TICTIATADA CCTCATGAGG ACTAMATITIC CAAGATTACA CAGCTATITA 36601 TGCAGAAAGG GAAGCATAGA CGTAAATTTC CAAGATTACA CAGCTATITA
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ACTOL TOTAL ATOTOL ACTOCTOATO ADDITION GIARAGAGGG ALCCASIANA
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2COE1 AACACATTCC AACTCCAGTT TGGCALLIAC IGLICCIALL GALCAAGGG
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CCAET ACACACAAC ACACACTCA TGAAGCTAAI CAACAAGCTA TGGGTAAGTC
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96101 TTAAATAGGT ATAATAACAT TATATATAAG AAAGCAGGAA AAATATGAAC 96151 AGCTCCTATT ATAATGCTTG CAAAATCAGG AGTGCTTAAT AAATGGAAGC 96201 CACACTGCGA TTTTCCAGAT AATTGTGAAA CAACTACGGG CCATTACAAA 96251 ACCATAGGAA ATTAGAAGTG AGGAGTAATT TGGAGACTGA CAAGCTCTAC 96301 CTTCATCTAA AGGCAGAATT TCTTCTGCAG TCTCCCTAAC AAGGAATCGT 96351 TATACCTCAG GGATGGGATA GTCACTACCA CATAAAGTAG TTCATTTTCA 96401 GACATGCATA ACCTTAGAAA GTTCTTCTCT TGATTTACAA TTAGCCTCAT 96451 AGTTCTGTTG CTGCCTATTG GAGTTTTACT ACGTGTACAG TCAGGCAGGG 96501 CTTCCATTCA GTCACCACCC ATTAGTACTG TTGTACTAGT AATTTATGGA 96551 TGGCGTCCAT TCTTACTGGT CCATGTCCCA TTCTGATTTG TGTTTGTGCC 96601 ATTTTTAAGT GTTTTGAATA TTAACCCTGG TATCAGATAA ACATGGAGTC 96651 CTGACTTTTT CCATAATCAT GAATAACAGT GGAATAGTTA CATCAGATTT 96701 GTGTGCCACT GTGGTCCCAT CTATGAAATA GGGATAATAA TTGTACCTAG 96751 TTCATAAGGT TGTTTGAGGA TAGTGTGGAA TAAAGTATAA AAAGGGCTTA 96801 GCCTGGTTTC TCAAATATTG CAATAAATGA AACTTAGCAT CATGATGCTG 96851 TCACAATGGT TCAATGATAA TTGAAAACAT CGATTCATCA TTTAGCATCC 96901 TCAGCTTATC AGTTTCTCAC TATCTAGCTC TTCTTACACT GGACACTTCC 96951 TAATTATTCT TTCAATGTTT TCTGGAAGTT AGTTGAATAA TTACTGTGCA 97001 CCAGATACTA CACAGTAGTC CCCCTTGATG CATGAGGGAT ACATTCAAGA 97051 CCCCCAGTGG ATACCTGAAT ACGCAGATAT TTCCAAACCC ATATATACTA 97101 TGTTTTTCC CTTTTGTACA TACCTATGGT AAAGTTTGAT TCATAGAGTA 97151 AGAGATTAAC AATAACTAAT AATAGAACAA TTATAACAAT ATGCAGAGTA 97201 AAAGTATGTG AATGCAGTCC CTCTCTCAAA GCATCTGATT GTACCGTACT 97251 TACCTATTTT TGAACCACAG TTGACTGTGG GTAAAAAGGA AAACTGCAGA 97301 TAAGGGGGA TTACTATACT ACGAGTTTTA CATGTACCAT TTAACTAAAT 97351 CATTACGACT CTATAAAGTA GATATGATTA TTGTCCTCAG TTACAAATGT 97401 GGAGGGCTGA GTCTCAGAAC GTTCTATTAC CGACATGGTT TTGGTCCCAA 97451 CAGAAAACCT CATAATGGTT TAAACAATAA AAGAGATTTA TTATCTTATA 97501 AAATCAGAAA ATCCAGATGT GTGCTGGACT TGGAGGGTAT CTTGATTCAA 97551 CAATTCAGCA GTATCACCAA CTAGCTGGTT TCTTTCACTC TCTTCTCTCT 97601 TTTCCATGTG GCCACTTCAT CCTCAGCTTG TTCCTCCATG TGATTGCAAG 97651 AAAGCTGCCT GCTGCCCAGG GCTCCATGCT AAATTCTTTA AATCTAAAGA 97701 ATCACACTCC TTCTCAAAAC TTTCCCCAGG ACAGCAAGGA AGCTTTTTCC 97751 TCAGAAGCCC AGAACATAAT TCTTTCTGAT ACTCAGTGGC TTAAATTGGG 97801 TCACCAGCCC ATCCCTGAAC CAATAACAGG GCCTGTGGGA TGGGATAACT 97851 CCTACTTAGG CCTGACTCAC ATAATCCTTC CCTACAGTCA GGGTGGAGTA 97901 GGTTTCCCAA AGCACACAAA ATACAGTGTG TGTGTGTATG TGTGTGTGTG 97951 TGCGCACGTG CATGCGTGCG CGTGTGTGCG CGCATGTGTG CATGAATGTG 98001 TGTGTTACAG AGAAGTGAAA ATACCCAGTT GAAAACTGAA ATGATGATTA 98051 AGAGAATGAA GAATGCGTAT TAGAAAGGCA ATCAAAATGA CCATTAGTAA 98101 GCTGCACAGT CGAGATCTGA GCCTTGGTCA TTTGACTACA GAATTAATAC 98151 TCTTAAACCT CCACTATCTA CTGCTTCCCA AATCAACCTA GAAATCCCTG 98201 GGGTTGGATA GGACCATTTG TGTTTGAGAC TATTACCAAC ATTACTAAGT 98251 ACTATACTAA TATACTCATG CAACCTAAAG CATATATATG TGAAGTGTGT 98301 ATATGTACCC ATATATATAC ATACACACTC ATATACTACA CACAGTATAG 98351 CCTATACAGG GCTCATGTTT AATCAGCATA CACTGGTCTG GCCCTATCAG 98401 TTGTATTTCA GTGTATTGGC TGATGAAGAG GTCATGCCTA AGCTTTGCTG 98451 CTACTCCAGC CCCTTTTCCA ATCTCCCCCT CATCCCCCAC CCCTTCCCTC 98501 CCTTGACCCA GCAACTGAAG TGCTAACTCC TGGCCCAGGA GAGGTCCTTC 98551 AGGGCACTGC TCCTGGGCTT CCATCAGCAT CCCTTCTGAT GAAAGGATGA 98601 CTGTGCTGTT CTGGTTGTTA AATATTTTGT CCATCACCTC TGGCTATTTG 98651 TAAATATATA TACTTACATG GAATACTATA TATGCCCACT ATATTTCAGT 98701 AAACTTTACT ATGCTAAGCT CTAGAGAGTT TAGATCATTT GTCCAAGATT 98751 ACATAATGAG TGACTGGGAT TACAACCAAA GATTGTGAAG TACAATCTTA 98801 GGAGGATGAT ACCTAGTCTT TAATCATCTA ACCCTGACAG CCTTTCACTT 98851 CTGCCCCTA TTCCAAACTG TTTTTCCTTA TAATTTTCCC TCACTCGCTC 98901 TTAACATGGG TCTGTTTTTT GAGACCAATA GCCCATCTGT GACACCCTAA 98951 ATAATATGTT ACAGAATTAT ATGTATAATA TTTTTCCCCT CTCCAGAACT 99001 TGGCGATGGC CCAATCTGAG AGACTGTTAT GTGGCAAATA ATTAAATACA 99051 AACTATGGAC CATCAAAAGG CCATGGGACA CTGAAGGAGT TGATTTTGGT 99101 TTCGATATAC CGATTTCCTT GTTTGCTATT TTCATGTACA TGTACCGGTA 99151 TAGGATTGCA GGGTGAGCAA CTTGACTCCA GGGGAGGCGC AATGAAGGGA

99201 TGTAATTAGC CTGTTAACCC TGCTAATGTC TTGTAAAGTC ATTCAAGTGA 99251 GAAGAGTAGA TACATCAATT CTTCCTTGGA TCCTGCCACA AGGAGCATTG 99301 TATTTCCACT CTGCTATTTA TAGTTCTCAC AGCTGGAATC AGCTGGTTCA 99351 GCAGGACATG GCTCTTTTT ATTTAATCAA ACCAAGATGC AATGAAGAAT 99401 TTCCAAAGTA TGCATCCTAG AATTTCCCTT TATCACCCCC AAAATTCCAT 99451 AGTCCCTCTG AAATCATAGG CTCGTAACAG GCATAAATCA CTTCTTATTT 99501 ATTACTCTTA CTCTAATACA TACACATACA CTTACTGGAA AGTCAAGTTT 99551 CTTAGTTGGC CAATGGTAAA TGTGGCGCAT CTGGCACACA GGGTTTGTTT 99601 GGGTTGTTTT GGGGGTGGGG ATTGGTTGTT TTGCTTTGTT TTGTTTTCTC 99651 TTCTCTTCTT AGGGGAAAAA GACATGCAGG GCTTAGTATT CCAACAATTT 99701 GAGAAACCAG GGGGCTGGGA TTCATTCATT TTTATGACAA ATAGTTACTC 99751 GAGCACCTAC TITATTCTTG GGTACTTTTA TGAGTCCAGG GGCTGCTGCA 99801 TTGAACAATA CAGAAAAGAA GTCCTTTCAC TTAGAACTTA CGTCCTAGTG 99851 GGGGTTGGGGGGTT GAGAGAATGA AGCATTCTTA CAAAGAATGT 99901 TAAAAGCGAA CTATGGGCAG GAATTGAGGA TATGAGTTTT GATGTATAAA 99951 GAAAAAGTGA CAAGGTCAAT AATTGGTGGT CTTAGTGTGA TAGATATGCC 100001 AGTTTGGAAA TTGTATTGAA TAAATGCTAG TCAGGGGCTA GGCTGTAGTT 100051 ATGAAAAGGA GATGATTAAG GAAGTGAGAA TAAGGAAACT ATTGGTGTGG 100101 GACGGATGAA AAGATTATTG GAGGCAAGTC AAGGAACTGA GAGGCCAGGG 100151 TGTTAGATGG AGCATTCATG TAGACACTGA AGTCACCAAG AATAATAAAT 100201 AACAAGTAAG AGGGAATTCA TCATTAGCTA TCTGCTTATG ATATGGATGT 100251 GTTTTTGCTG TGTCCCCATC CAAATCTCAT CTTGAATTGT AGTTCCCATA 100301 ATCTCCATTT GTCATAGGAA GAATGCAGTA GGAGTTAATT GAGTCATGGG 100351 GGTGGGTTTT TCCAATGCTG TTCTTGTGAT AGTGGGTGAG TCTCATGAGA 100401 TATGATGGTT TTATAAAGGG CAATTCCCCT GCACATGGTC TCTTGCCTGC 100451 CTCCACGTAA GAGGTGCCTT TGCTTCTCCA TCACCTTCTG CCATGATTGT 100501 GAGGGCTCCC CAGCCATGTG GAACTGTGAG TCTGTTAAAC CTCTTTTTCT 100551 TTATAAATTA CCCAGTCTTG GGTATGTCTT TATTAGCAGT GTGAGAATAG 100601 ACTAATAAAG CCAATTGGTA TGAGGAGTGG GGCACTGCTG TAAAGATACC 100651 CAAAAATGTG GAAGCAACTT TGGAACTGGG TAACAGGCAG GGGTTGGAAC 100701 AGTTTGGAGG GCTCAGAAGA AGATAGGAAA ATGTGGGAAA GTGTGGAACT 100751 TCCTAGAGAC TTGTTGAATG GCTTTGACCA AAATGCTGAT AGTGATATGA 100801 ATGAAAAAGT CCAGGCTGAG GTGGCCTCAT GTGGAGATAA GGAACTTACC 100851 AGGAACTAGA GCAAAAGTGA TTCCTGCTGT GCTTTAGCAA AGAGACTGGT 100901 GACATTTTTC CCCTGCCATA GAGATCTGTG TAACTTTGAA CTTGAGAGAG 100951 ATAATTTAGG GTATCTGATG GAAGAAATTT CTAAACAGCA AAGCATTCAA 101001 GAGGTGACGT GGGTGCTCTT AAAAACATTA AGTTTTATTC ATTCACAAAG 101051 ATATGGTTTG GAATTAGAAC TCATGTTTTA AAGAAAAGCA GGGAATAAAA 101101 GTTCAGAAAA TTTATAGCCT GATGATGGAA TAGAAAAGAA AAACCTATTT 101151 TCTGAGGAGA AATTCAAACT GGCTGCGGAA ATTTGCATCA GTAATGAGGA 101201 GCAAAATGTT AATGGCCAAG ACGATGGGGA AAATGTCTCC AGGGCATGTC 101251 AGAGGTAGCC CCTCCTATCA CAAGCCCTGA GTCCTGGGAG GAAAAATGGT 101301 TTCATGGGCT GGGCCCAGGG CCTTGCTGCT TTCGTAGTCT CAGGACTTGC 101351 TGCCCTGCAT CCCAGCTGTT TCTAAAGGGG CCAACATACA GTTCAGACCA 101401 TTGCTTCAGA GGGTGTAAGC AGCAAGCCTT GGTGGCTTAC GCATGGTGTT 101451 GGGCCTGTGG ATGCACAGAA GTCAAGAATT GAGGTTTGGG AACCTCTGCC 101501 TGGATTTCAG AGGATGTATG GAAATGCCTA GATGTCCCGA CAGAGTTGTG 101551 CTACATGGGC AGAGCCCTTA TGGAGAACCT CTGCTAGGGC AGCGTGGAAG 101601 GGAAATATGG GGTGGGAACC CACACAGA GTTCCCACTA GGGCACCACC 101651 TAGTGGAGCT GTGAGAAGAA GGTCACCATC TTCCAGACAC CAGAATGGTA 101701 GCTCCACCAA CAGTTTGCAC CATGTGCCTG GAAAAGCTGC AGACATACAA 101751 TGCCAGCCAA TGAACGCAGC CAGGAAGGGG GCTGCACCCT GGAAAGCCAC 101801 AGAGGTGGAG CTGCCCAAGG TTGTGGGAGC CCACATGTTA CATCAGCGTG 101851 ACCTGGATGT GAGACATGGA GTCAAAGATT ATTTTGGAGC TTTAAGATTA 101901 TACTGCCCTG CTGGATTTCA GACTTGCATG AGGCCTGTAG CCACTTTGTT 101951 TTGGCCAATT CCTCTTATTT GGAATGAGTG TATTTACCCA CTGCCTGTAA 102001 CCCCATTGTA TCTAAGAAGT AACTAACTTA CTTTTGATTT TACAGGCTCA 102051 TAGGCAGAAG GGACTTGCCT TGTCTTAGAT GAGACATTGG ACTGTGGACT 102101 TTTGAGTTAT TGCTGAAATG AGTTAAGACT TTGGGGAATT CCCAGAACTG 102151 AGGGTTCCTC CCCATTGTAG ACCATATAGG TAGCTTCCAG ACGTTGCCAA 102201 GGCATTTGTA AACTGTCATG GTGCTAGTGA GAGTGTCTTT TAGCATGCTC 102251 ATGTATTATA ATTAGTGTAT AATGAGCAGT GAGGATGACC AGAGATCACT

102301 TTTGTCACCA TCTTGGTTTT GGCCAGCTTC TTCACTGCAT CTTATTTCTA
1022E1 TOACTOCOCT CTTTGTGACC TGTACCIIGC AAAAACAGIC CIGCIGATIA
102401 CTAAATTCCT ATCTCACCTA TTCAAGATGG AGICACICIG GICIGAATGC
ACCASE COCTOATAGE ACCASTOCACA CTCTTCAAII CICCCAGII GAIICIGAAG
102501 CATATOCAGG TITATTAGCC ACTAAGTAAA AAIAIAIIAI AGACIACIGI
102551 CAATGAAAGA AACATTTTGT AAGTTATIIC AIAIIIAIII IIACIIGAGA
102601 ACACTCAAAA GGTAAAGAAG TGATGCTAAA AIIIAGAACI AGAAAAICIC
103651 AACTTGCTCT AGTAGGAATT TTAATAGAGC ACACIAAGII ICIIIICAII
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102751 TOTACTONAT TAGATGTTAC CCTATTATAT ITTIGGAGAAA CTATATAGTT
TODOG ACATOTAGO CTTAGATAAC TTATTTTTAL GILLACAAAL CCACLILCIC
1030C1 TTATACATTT TTCTTAAATT TTTCTCATAT ICHICICIG AATHIGIGGI
TARROLL AND TARROLL CTTTCCCATT CTATGTCATG GIICIIIACG AAGCIIICIC
102051 ATCCTCTCCA TCCCCACGGA ACTATGTCTC ATTIAICITI AGGITTCTG
102001 TATOTTACTA CACTCACTTA CCAGAGTAGG IAAAIAICIG AIGAAIAAAI
102051 CAATACAACA TITAATTAAG AAGTAATCAC AIIAAACIAA IIGIICCCIC
102101 TOTOATOTOT CTAATATTAA GTTT(AAAGI AGIIICIGGG MAMAGIAGI
102151 AACACAATCA TCTATCGATT CAATAAAIAA GAAAAAIGGI GCICAGGGAI
TOORDOO TO TOO TO
102251 CTAACTCCTC ATAAATTCAG GCCAAGAAAT IIGAIACIGA ICIIGCCICI
102201 CTCAACTCTC ATCCATCTTT GGTAGGGCCC CICIOGGCCI CITITICACC
102251 TOCCAAACAC TACCTCATAC TCATTGGATG CAGATCTGAA AGAGGTGGAA
102401 ACACCCCCAC ACCTGGTTTA TCTCTAGCTT IAIGGIGCAG AGAGIATITG
102451 ATCCTCTCCA CACTCCTCTG TATATACTGT TAGGATCAGC CITCLIGAGT
ANDENA CONCECNAT TECTOTOGGT GILALIANGI ILLIUMITIA CIUMCOTTO
102551 CCCACTCCCA TACAATATCA TATTAATCAA GAAACCAICC CIGACAICAI
102CO1 CATCCACTTC CAAAACTTCC AGAAATTAGA AAAATTTI GAGTAGGCAT
102CE1 TETECTITET TECCENCECT GGAGTGCAAL GGCIAGICAG GGCACAGITO
102701 TOCALTOCAC COTCALACTO CTGGGCTCAG GIGALATOCO TOLLOCACOL
AND THE COTTO ACTOOC TOCOMOTATA AGIAL ACIDIOCCIO OCCASIONI
400001 TITTITAC CATCITATAA (GGC LALAGI LALIMALIA ILAGI COLO
400001 CCTACTTACT CAAAACATTT GGA((AGICI IIIACACACI GAIGIACAC
103001 AACATAACTA TAGTTAGTAA CATTGTATTA TATACCAGAA ATTIGCIATA
ACCORD TO A ACTATO ATCTTCCCOA CIII AAACAC ACAAIIIII G GIII AAACAC
TO A DOLL A CITA A A A A A A TITA A A A TITA CONTROL A DADISTADADA ARATTUALA GONDA GONDA CANA
ACACE ACCCACCT CTTCCAATGA AGGGGAGIAGI CIGGIGGIA ATACTICONO
ADAIDI CATACAATCA TACACTITICO ADAGOOTIGO IGAATATIAI ADIAGOOTAGO
$A \wedge A + E = A \wedge C + C \wedge C \wedge A \wedge C \wedge C \wedge A \wedge A \wedge A \wedge A \wedge C \wedge C$
104201 CACTCTCACA TITITACTGC CITICOLIAA IGIACCATIA AAGCCCTOA
ACADES COCTAGATTO ATACACTOCA TIAGAGAAGA AAIICIGAAAA CAGGIIIIGO
404201 CAACACATTC TCACCCTAGT (AAAIAGUII ILAIGUIGUI AQAAIAGUI
$A \cap A \cap C \cap A \cap C \cap C \cap C \cap C \cap C \cap C \cap $
104401 ATATTAATCA CTAACAACTC (CATATELAT AAACAGAACC AAGIGIGIGI
1044E1 TAAACTCTCA TAAATCTTAT GGIGGAAGAA GIAICCCAIG IGGICAGOO
101F01 ATATCCCATT ACCCCGGGATT [GALL AGAA ALGAAAAAL AGGAAGGCII
ADARES COTOCACOA ATOCOATOTO DO ISSUE I PARAGOUNA ANCIONA
ANACOS TOTONOTOCA CTOCTONOGO GACILIAAII IAGGCAAAGC AACAGCAGG
104CE1 CTCCATCTCA CCACCCAAAA GGAGACAGGG GGIGGIIAIA ICCCICCCICCCIC
404701 ATCAACCATA TTTTCCCAT IIAIAGIICII IAAGCICACA ICAICIOIG
$A \cap A \cap B \cap A \cap A \cap B \cap B \cap B \cap B \cap B \cap $
404001 TATCCCAATC TAAATCCTTT ATAIGAILLA AIGUALLAAT ATCTACATOS
4040E1 TTACATACAA CATCCTATAG GAAGIIIAGA GICIGAGIII IIQAAIQAA
104001 CACCCCTTCC TTCACACCCCC ALLICITUDE INACIAGUE IGIGACETO
104051 CCTTAACCTT CACTTTCTG ATTLAAAAAT TUUUUATTI CIUTCICATA
A CERRAL A A TITA CITCI CACAATTGAA TGAGAAGAIG AGIAIIGAGA AGCIAGIACA
A SEA E4 CTCTTTCAAC TCCACTTAGC TITLE ITAAGL CITTIGCCC CITCCCCITA
$A \wedge C \wedge A \wedge C + C + C + C + C + C + C + C + C + C$
A DE 1 E 1 A COCATATOA A COOTGACAA TA I I I I I I I I I I I I I I I I I
AAE3AA AATTCTTTC CAATCAACTA CAAGAAAAAAAAAAAA
AAEAEA CCCACCACAC CCCTATTACA (AIGAAAAAG GIAIIIIGII CICIICIII
$A \land E \land A \land A \land C \land C \land C \land C \land A \land A \land C \land C$
105301 GAGCTCTACT TACAAACTCC TCATAGACCC TTAAATCACA TTGAATTTAC 105351 TATGGCAGGT TATAGTACAA CAATACACCC TTAAATCACA TTGAATTTAC

105401	TAATGAGAA	AATCATAGTC	TACTCAATTT	TCTTCCACTA (CTATATTTCT
105451	TCAAGAAAC (CATCACAACT	TTTCAGTGTT	AGCTGGCCTT /	AATATAACAC
105501 (CAATCACCT	ΑΤΑΤΤΤΤΤΑ	ATGATACAGA	AGGCCTCAAG (CTGAGAGCAI
105551	TTGGCCAGCA	ATAGCATCTA	CCTAGACATT	AATGACATTA T	TTTGTTCTC
105601	ATTGCATCTA	CTTTTTTGCA	TTCCTTCTTA	TAAAAGGCAA /	ATIGGIIIIA
105651	CATTTGCAAA	TTGGTTTTTA	CATTTACTTA	ATATCACAGA A	AGAATTCITA
105701	CATTITAGGG	TCATTGTAAA	GACTGACCTA	ATACATGTAA A	ACTACTIGAT
105751	CCACTGACTG	TCACGAAGAA	ATCACTCAAT	AGAAGTCTAA	TATTGGTACA
105801	ATTTTTATGA	GGTGGTCATG	GGTTTCTCCC	CTTGGAAAGG /	AAGCTGGAAC
105851	TGCTTCATCT	TGTTTTATGC	GGCTTTGTCT	ATGCTGGCAC	ATAACTAGTA
105901	TGTACCAATG	TATCTCAGAA	AAGATATCAA	GTTTTCTGTT	TAAAAATTIC
105951	AGTTTGAGAA	AAATCAGTTA	AAGAAAAACA	TAAAAAAGAT	AAAAGTATAT
106001	GTGTTATCTA	GATTTGTGAT	ATAGGGATAT	GGCAATAATC	AAGATGGTGA
106051	ΤΛΛΩΤΩΛΑΤΩ	CTGAATTTCA	AGAACTACTG	ATTACACCCT	CTAGAATAAG
106101	CTTTTGCCCG	TGATGATTAA	ATGTGTACGA	TTTCTTCCTA	ATATITATIT
106151	TTGTGTATAT	TGGGATTTAT	TAGAATATCA	GGGAAGATCT	GCAGGGCACA
	AAAACTGTAT	GTTATAAATG	TTAACAGTGT	CAATAAGATC	TTTGTTATGT
106251	CTTTAGAAGG	CTGCTAGATG	AGGAGAGTCC	TAGATCTTAA	AGGCTCCTTA
106301	TTCAATTITT	ACAAAAAGGA	TTTGCAAGTG	GAACTGAAAC	TCCAAGTACC
106351	ATCTATTGCT	CATTATTTAT	TTACCTATTT	TTGAGCCTGA	TTTTCCTGAT
106401	CCACCTGTG	CTCAGGGGGC	TAAGAAACAC	TGGTAATGAC	CTCTAATTTC
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106501	ACTITICITIC	AATGCCTTAT	TTCTTCCTTA	CCTTTACTGC	TTCTGACATT
106551	TGAAAACAGG	GTCTCTGATT	CTCAGAAATG	TGAGCAATGG	TGAGATTTAG
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106851	CTTCCTCACA	GCACATGGCC	CACCAAGGAG	AACCCAAGTT	
106901	CCTCACTTGC	TCCCTCAGCT	GGGTGCCTTT	GTGCATGATT	TCTGCTGTTC
106951	CACCATITAT	AGAGGCCTTA	AATGAAGGCA	TATAGGTCCT	ATCAATCCAA
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107001	TCTCATCCAT	GGCTTCACCC	TACTTCTATO	ATTAAGGCAT	CCTATTCTCC
107031	TTCAGTCAAC	TTCTTCCTCC	TCCTCATTTT	CTTGGTGACT	TGGTCATTGC
107101	ACATGAGGAA	AAACATGAAG	AAATCAATTA	ATCTTCAAGT	TTAACCACCT
107201	TTACACACTA	CCCTTGTGAA	AGATTAATTO	TGTAACAGTG	TGGTTAAGAA
107251	TCTCACTTCT	GGAGCCAGAT	TGCCTTCATI	CAAAACACAC	TTCACTCATT
10/231	TCCTACCCCC	CACACCTTTC	ACAAGTTGC	TAAACTTTGT	CTTAGTTTTT
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107331	AAATCTTACA	GGGATCAAAA	GAATACTTA	TTAGGGTCAT	TGTAAAGACT
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107501	CTCAATAAA	GTCTAATATT	AGTACAATTO	TTCTGAGGCA	GTCATGGCTT
107551	TCTTTCTTC	GAAAGGAAG	TGGGACTGC	TCATCTTGTT	TTATGTTTCT
107501	TTGTCTATGC	ΤΑΑΓΑΓΑΤΑ	CTAATACGT	A CCAAATCTCT	ACCAGATAGA
107651	ATCTCTAAAA	CTTCTCCTT	CCAAATAAT	TATTTTGATTT	AAGAAGTGAT
107031	ATACCAAATA	TTCTGCTTG	CTACTICTT	A GATCTTGTGT	TTAAACCATT
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107731	TCTCTTTCAT	GTGTGCAGG	GGCAAGGGT	G CAGTCATGAC	ATTTTATTCT
107051	TCCTCCACCT	GEGGCTCTG	T TGCCTACAG	A ATACAAGCCA	TCATTCCAGT
107001	CTCCCAGAGCI	GAGAGTCTC	A GTCTGCCCC	T ATTACCTGGT	GTCTTATTTA
107951	CAATCACTCC	TTTCATTCT	C AAGGCTTTT	T AAAATTTGGT	CAGTGAATTA
107931	CAATGACTGC	TTTCTCTAT	T ATATTCCTA	C CCTGAACTCA	ACTTGAAAAT
100001	AGAAGAGGCI	COCANGCAT	T GTATATGAA	T GGTACAGAAG	TGAGCAAACA
100101 T00001	. CAATIGUTT	ACACCCATT	Τ ΤΟΤΔΔΔΟΔΤ	T GCCTTAGGGA	TCTCTTTCTG
1001E1	ATARAHAHALI ATARATARA	TTTTTCA	Δ GTT Δ TTT Δ C	TCGTTTGTTC	AGATTCTGAA
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1003E1	AAAGTAGGAG	, ICICAGACA T TOOTOTTOT	י יאכיכאטט ד ראררדרדרר	C CAGCTCGTTA	TGTAGAGCTG
100301	L AIGAACAAA	AATCACCTC	Δ ΔΤΓΔΓΔΔΔΤ	C AATGCCTGCC	TTTTAGAGTG
1003E1	L AICHIGIGAC	TCACTTTCC	Α ΤΕΤΕΕΔΕΓΤ	C ATATTTGAAG	ACCTCATITG
TO0 401	L ICIGCIGGIC	I CTCCATTTA	$T \Delta \Delta T \Delta T T T C \Delta$	T CCCTGATGG	CTGTCGCTTG
T09401	L CCCTCATC	T CCAAATTCT	A CCCACTCTC	A AGGGTAACCA	CCTATCTCTC
T08427	L GGCCTCATG	I UUAAAIIUI	A GCCACIGIO		

108501 TGGTGCCCCC TATGCGCATC CCTACAAGTG AGCTGTGTAT CACACCATGC 108551 TGCTTACATT TTTATGCAAC ACGATTCAGT AACAGGCAGA AACTTTTATT 108601 CTTACTGACT CATATTCTTT ATATTCATCT GAAAAGATTG ACATTTAAAG 108651 GAGCCAATTG TACAATGGGA AATCCACTGT GTGAATATTT CTTGTACATC 108701 AGAATTTGCC TTAAAAATGT TTTTAACTTA GAGCACATCT GTACTGTTCT 108751 CCCCAAATGT CCCATTTACT AGTTCAGAGC AAGATGACAT TAGGTCTTGG 108801 GTGACTCCTG ACCCACTATC CTAATGTATA TTTTCATTTC CTACCAATGT 108851 AAGTACCCCA TCCAATTCTA TCAATACCAT AGTGTCTAAA ATTCTTGTAT 108901 TTTTCTTATT CAGGAAATGC TACAACCAGA GGAACAGTAA TGTCTGCCTG 108951 ACATATCAGA GAAAATGACA ATTATGTCAT CATCTGTCAC TTAGGTTTCT 109001 TAATACCATC CTGTTACAAG GAATAGAGGC AAAAACTCAG CGTAGGAGGT 109051 GAGAAAAAC TGAGGCTGCC ATCTTAACAG CCTTTTCATT GCAGAGTCTC 109101 AAAATGTACC AAAAGATGAA GTGGACAGTG TCCTTTTAAA ACAACATACA 109151 GTGTAGAATA CAGTAACTTA TCCCCATTTA ATTACTCCCT AGGTAGTGCC 109201 TAAGGATATA CATTTTCAGC AAGGATCTCA GAAAAATGTG GGGCACATAT 109251 TCTAAACACC TGCGAGTAGC AGAGACTTAA AAGTTGGGAG CAGTGCCAAC 109301 TGATTGGTTA TGGTGCCCTA GAGCACTGCG TTGATGAAAG AGATCCTCAG 109351 GCTGTGCACA GGAGCAGCAA GAAAGAGTGT AAATGATGAC AACAATGATG 109401 GCTGAATTCA ATGGCATCAT AAAATGAATT CAGATTTTTT ATATGATCCT 109451 CTATCCCAAG CAATAGAGGC AAAAAAAAAA AGGCAGAAAC CCTCTCCTAG 109501 AGTGGTAAAT TAGGAAGTTC TGAGGCTTGC ACCTGAAAAA CTTTTCACTA 109551 AAGTAGTGAT TCTCAACTGG GCGTAATTTT GCTCTACTCC TTCTCCCTGC 109601 AGAGGACATT TGGTAATTTC TGGAGACATT TTTGATTATC AGGATTCCAG 109651 CCAGGGTTGG GAGGTGATAT CAGCAGCTAG TGGGTAGAGG CCGGGATGCT 109701 AGCATGCATC CTGCAATGCA CAGGACAGTT CGCACTACAA AAAATTATCA 109751 GGTCCAATAT TTCAATGGTG CTGAGGTTGA GAAACTCTGC TCTAAGGCTC 109801 ACTCAAGGCC TGGGCTAATG AAAAAAGCCA GAGAAGTCCT TCATTCCCAA 109851 GGCAATTCCT GTGTCCTTCA GTCAGCAGGA GACTGAACCC TTTCCTGTGA 109901 TCCAGCAGTC AAATTTCATT TTCAAAACAC AGAAGGGAAC CTGGCAGATA 109951 GGTCACCATG GTAAGGAGAA GCAAGTCATG GCTGTAGCCG GACCTGGGAC 110001 TAAGGCTTAG GGCCAGCACT CTGTGAAGTT CTGCCTTCAT TGTTTAGCTC 110051 AGAAGCACCA GGTTACAAGA TCCAGTAGAA CCTGACCCTC AAATAATTTC 110101 TCCCTCTCCT TAAATAGGCA TCCTGGAAGT GGACTAGAAC TCTGAGCCAA 110151 TCAGAAATTA ACTGTTTTAG GTTATTCAGT TCTTTGATCT TGTGATACAG 110201 CACACAAAGT TTTTGGTAGA TTCATAGTCT GACAAAGGGA TTCTAGACAA 110251 AATTCTAGGT CTTAACTCCA GCTCTGTAAC TTTTGAGTCT TTTGAACCTA 110301 GCCATAAATG ACTCATATAT AAAATAGGGC CTACCTCACT AGGCTAAAGG 110351 AGAAATTITG TGCAACAACA TTTTGAAAAC TGAATCATGC AAGTGTAAAC 110401 AGCATTTAAA AGGAAAATAC TCAACATTCT TTCAACTGAC GTGTAATGAG 110451 TACTCACCAG AGTTGAGATG TTCTGCTAAG CCAGGCCCTC TTTTAAAAAT 110501 GTAATCTCAA ACTTTATTAG GTCTCATAAT CACCTGGAAG GCTTATITAA 110551 ATATTGGCGC CCAACCCACA GAGTTTCTGA TTTGTTATAA TAGAGTTGAG 110601 GGGGGACGGG GCGTAAGAAT CTGCATATCT AACAAGTTCC CAGGTGATGC 110651 TGATGCTGCT GATCTGGGCA CTACATTGTA GGAATCAATT GGCTCTAAAA 110701 CCTTCTCTAC CTTCCACTTC TACATGAGCA TACATAATCT TGTAGCTGAG 110751 TCAGCTTGGA AATCTATGCA GACTAAAGTA GACAGTTGCA TGTCTGGCTG 110801 CTCATCTGAA TCACCTGTGG AATTTGTTGT TTTTAATACA GATACCTGGC 110851 TCTCCTACAA GTCCCACTGA ATTGGAGTTT CAGGAGACCG AAGCCCAGGC 110901 ACATGTATTT TGCAAAACTA CACTGAAGTT TCTGATAATG ACGGATATCA 110951 ACAATTAAAC GCTTACTTCT TGCCAAATGC TGTGCTAAGT CTCCTGTAAT 111001 CATTCTTTCA TITAATATTT CTAATAACCT CTTGAGAAGA CTATGATTAT 111051 CTTTCCAACT TTACAGAGAG GATAAGTGAC GTTTTCAAGG TAACACAGCT 111101 AGTTAGTGGT AGAACCTAGA CTTGAAGCCA AGCAGTCTGA CTCCAAGAAA 111151 CAGGCTCTTC ACCACAGTCT CCAGACTCAC CTGATTTGTA TTAAACTTTG 111201 TGAATCACTG ATCCAACACT ATGAGCAGGA CCCATGGGGA GAAAGAGAAA 111251 AAGAAAAAC AGAGACAACC TACGCTATGA TAAAGTTATT GAAATCAGGC 111301 ATTGGTGCCA CTCCAGCAAG AATGAGTGGC TACCTTTTT TTAGATGAGT 111351 GCTACCTTTA CTTTACTGAA ATATCATGAC ATAAACAAAG CCAAAACACT 111401 TTCTGCACAA AATAAAATCC TGGTGATAAA GGCAGTGGGA TTTATGCTTA 111451 GCAGCAGGCT GGATACTATC AGGGAGCAGA CAAAGAAGTT TGATACAGGG 111501 CTTGTGGACT GTGGGCCCTG GAAGAATCTG ATGACATGCC CTCCAATTAC 111551 AGCTGTATCT CATCAAAACC ACAGACACAT GTAAATGGAA ATGCCAACAC

111601 TTCAAGATTC TCTGAAAGCA GTTGACTGTC ATGCCAACAG CTAACATAAT 111651 AGGCTTGTTT GCCTGAGCTT TTGGCACGGC CCTTTTGTTC CCTTTAGCTG 111701 TAAATGCAGG GACCCTAGAG CACCTCATAG AGTGTGTTCC CTGCCACGTA 111751 TAAGTATTAG ACCCACACTA TATTGCTTTG AGTGTTAAAG CTGAAAGAGA 111801 CCCTAGAGAT CATTTAGTCT ACTCCTTCTT TTTTTATGTG AAGGAAAATT 111851 TAGATCCACC TTGGAAAAGG ACTTAGAGTC TACTATGTGT TAGAGGCTGA 111901 GTTCAAGGCA GAACCCAGGC CTCCTGGCTC CCAGTCTAGT GCTCTTTATA 111951 GAATCCCTTT AAAAATGAAG TTGACTGGCC GGGCGCAGTG GCTCACGCCT 112001 GTAATCCCAA CACTTTCAGA GGCCGAGGCA AGCAGATCAC GAGGTCAAGA 112051 GATCGTAGAA CACCCTGACC AACATGGTGA AATCCCATCT CTACTAAAAA 112101 TACAAAAATT AGCTGAGCAT GGTTGTGCAT GCCTGTAATC CCAGCAACTC 112151 GGGAGGCTGA GGCAGGAGAA TCACTTGAAC CCGGGAGGCG GAGATTGCAG 112201 TGAGCCGAGA GCACACCATA ACACTCCAGC CTGGCAACAG AGTGAGACTC 112301 ACCCCGCCC CCACCCACCG CCCCCCGCTA TCCCTTGATA ACAGTTATTT 112351 TGCTGGGAAC TGATGAGGCC AACCTGAATT ATCAGACAAA AAATATGTAC 112401 AAAAATATTT TAGAAAAACT GAAGAAAAGG GATGCTTTCT TGGCTAGGAA 112451 ATAAATATTT GTATCCATAT TCATGCCAGT TTTGTAGTAA TAATATTTGC 112501 CTCTTACTTT TCTTTTCTTT TTTTTTTGAG ATAGTCTCAC TCTGTCACCC 112551 AGGCTGGAGT GCAGTGGTGT GATCTCAGCT CACTGCAACC TCTGCCTCCC 112601 AGGTTCATGT GATTCTCCTG CCTCAGCCTC CCAAGTAGCT GGGATTACAG 112651 GCACCCATCA CCACGCCCAG CTAATTTTTT ATTTTTATT TTTAGTAGAG 112701 ACAGGGTTTC ACCATTTTGG CCAGGCTGGT CTCGAACTCC TGACCTCAAG 112751 TGATCTGCCC ACCTCAGCCT TCCAAAGTGC TAGGATTACA GGGGTGAGCC 112801 ACCACGCCCA GCCTATTTGC CTCTTTAAAA AAAATAATCC CATAAGGGAT 112851 GTTTGGAAAC GTGATACTTT GAGTATCTCT TGGCTGTCTC CTTCATAGTA 112901 TTCATAGGCT AAAGTAACTT AAAATGTCAC CAACAGACAA AAGATGCCTA 112951 ACTAGAATTA CCTGACCACA AATTCTTAAC TACTAAGGGT AAAACTTTTC 113001 TGAGGCTGAA CTACAGGCTT ACAATCAGAG ACTAATCATT GCATATCATG 113051 AAATGGAGAA TTGTTGGTTT AAGACCATAT CGGCCTTGAG GATGGACTGC 113101 AACTGGCCTA CAAGAATTAA CAGACTAATT GGGTGTTTTC AGTTAAAAGC 113151 ATGATTGTGC CACTGGGTTG AATGGGACTT AACTTTCTGT GTGGTTCTTC 113201 TCTCTCTGCA GGGCACGTGC ACATCACAGA TTTCAACATT GCTGCGATGC 113251 TGCCCAGGGA GACACAGATT ACCACCATGG CTGGCACCAA GCCTTACATG 113301 GGTATGGGTT TCATGAGTGT CTTTTTTTT TCTTTCCTGT AAATACCATT 113351 TATTACAGGT GGAATCATCT GTGGGGATTT GCAGCTAGAA CTGGTAAGTT 113401 CCTCTCTGAC TTTACCTGTG GAGCTTCTGA TTTCATGGGT CTTCTCCACT 113451 AGCAAGCACC CAAGATGACT TTGATAGGAA AGGACCATTG ATTACATTTT 113501 GAAAACTTAC TTCGTGTGTC AAGGAAGACC GTTTGTACCC ACTTCCTAAC 113551 AAAAATATTA ACTAATTCAA TAAATACCTA CTAACTGTCT CTGTGTGCTT 113601 AGCACTGTTT CAGATGCCGG TGACCCTGTA GAAAGCAACA CAGACAAGGT 113651 CTTCAGATCC TGGAGCTTAC ATTCTAGTGG GAGCAGATTT ATAAAAAAAA 113701 AAGAACCAAA CAAGGCCGGG CATGGTGGCT CACGCCTGTA ATCCCAGCAC 113751 TTTGGGAGGC TGAAGTAGGC AGATCATGAG GTCAAAAGAT TGAGACCATC 113801 CTGGCCAACA TGGTGAAACC CTGTCTCTAC TAAAAATACA AAAATTAGCT 113851 GGGTGTGGTA GCATGCGCCT GTAGTCCCAG CTACTCGGGG GGCTGAGGCA 113901 GGAGAATCGC TTGAATCTGG GAGGCGGAGG TTGCAGTGAG TCGAGATCGC 113951 GCCATTGCAC TCCAGCCTGG CGACAAAGCG AGATTTCGTC TCAAAACAAA 114001 CAAACAAACA AACAAACAAA GAAGTAGGAA ACAGTAATAA GCAAAATGAT 114051 AATAAGTGGC AAAGTATTAT TITAACCATT ATTTACATAA TACTGCATTA 114101 CATACATAGA GCTATAAACT TTACAAAATA CATTCCCAGC TATAATTTTA 114151 GATTTACTTG TAGTGCCACA ACAATCCCAT GAATTCTTCT GTTTAAAGAT 114201 AAGGAAATTC TGGAGCTGGA TGGTGGCATG CATCTGTGGT CCCAGCTGCT 114251 TTGGAAGCCA AGGCAGGAGC ATTGCTCGAG TCCAGGAGTT GGAGGCTGCA 114301 GTGAGCTATG ATCATGCCAC TGTACTCCAG CCTGAGTGAT AAAGTGAGAC 114351 TCTGTCTCTA AAAACAAATA AATTATTTTT AAAAATAAAT AAAGGTGAGG 114401 AAATTCTGCC TCAGAAAGTT TAAATGTCTT TGCATTATTT TGTGTGTAGC 114451 GAGGTGAGGA ACTGGTTTTT GCCTTGACAA TTCAGCATTT ACTAAGGGGT 114501 GACCAAAAAG AGAGTGTTAG ATGCAAAATT GTCAGTTGGT TTCACGTATA 114551 GTTGTGGTAA CAAATCAACT ACAAAAACTC TAAGTTCACC TGTTGGGAGC 114601 AGCCATCTAT ATAGACACCA GAACTAGTTG TTAGCAGAAC CAGCTTTACT 114651 TCCCGTCCAG CCTCAACAAT GCAAGGAGAG AGCTAGTGTC CTCGAGGGGG

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114701 CACACAGTAT TCAGAAAGAG GGAGTTCTCC CTCCCTTTTC CCTGTGGTTG
AAAREA GECCEAACCC AACEGACECA (AAICICAAGA GAAIIAICIG IMMOCICII)
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11 ADE1 CTCTACTTAC TCCACTTGTG ACTGGTCCTG GAGTTAACAC AGCCTGGTTG
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114901 GCCATGGAAG TITGATGAGT TIGGGGGGCTA GTCTTTGGG GAGAAGGGAG
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114951 AGCAGGAGAC AGGTATGCAG TOATCACTT CACATGGGAC CCTCCAATGA 115001 GTGGATTAGC TACAGGCTGT GATCCACCTT CACATGGGAC CCTCCAATGA
ALEGE CONNENTAT ACCOTOGNAG GGAGGGAGGG ICCIGICAGI GIGACIICCI
115101 CAAAACACCA CAACTCCCAA TAGAGCTCAA CAIAICAGAA ICACIGAGA
115151 TOCACTOTAC CONTACTOTO ATTTAAAGCT CHAGCGIAA HICCHCCGIG
115301 TACCTACCAC TCACAACTTC CACCACAGAC CCCIAAAGAG AGAIIACICI
AARDEA CCACCCTACC ACATCTCTCA GGACCCCCC GCCCCACIA CCCIICIIC
115251 GCAGGGTAGC ACATGTGTGA GGACCCTAGGA AAAGATAGAA GGACGTGTGT 115301 ATGTCCTAAA ACAAATAGTG CTTTCTAGGA AAAGATAGAA GGACGTGTGT 115301 ATGTCCTAAA ACAAATAGTG CTTTCTAGGA AAAGATAGAA GGACGTGTGT
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115401 CAGCAGGGTG AGTGAAGGAG CITTOTA AGTAAATGTA ATAAGCAAAT 115451 ATTCACAGAA CTGAATTGTA AAGCATCTAA AGTAAATGTA ATAAGCAAAT
AREAL ACCACTAAAA CTTATTACCC AACAGACIGA GAIAICAIIA GGCGAGCICC
AAFEEA TTATCCACCA AAAACACGAA GTTAGACACI GLACAGIIGC IGICAAAIOA
$A = C \wedge A = C \wedge A \wedge C \wedge C + A \wedge A \wedge A \wedge C + A \wedge C + C + C + C + C + C + C + C + C + C$
A SECTA CTAATCCCAC CACTTTCCCA GACCIACICA GGCGGAICAC CAGAICACA
AARANA CATCCACACC ACCCTCCCCA ACAIGGIGAA ACCCCAICIC IACIAAAAA
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AACAAA TCTTAAACT CCTCCCAIIA AGII GGGIGGG AAIGAAIIGI II CCCCIII C
44 COE1 TATECTCACA CTAATTCAAA GGTAAAAIAI IILAALIIGA AAICAAGGAC
11C101 AACACCAATC CCATTTTCTT TTAATAIIIC AIICICIICC CCCAIGIAAC
11C1E1 TACACACACA CAGAGAGAGA GGAAAAGAGA ACCCCCIACA IGCAGAGAGAGA
11COM CCTCACTTC CAACAGAAT CIIIIAIIAI AAAAAAAAA UGUUNII
TATES TO THE TOTAL CATA TITES ACADE TECADALLIC ALGUELLICA ALIACCASIS
116251 TICTATGATA TITGAACAAC TOOTTCTAA AATAATGGAC ATATATAATT 116301 GGGGGAATAA ATCTCTTTTG TCACTTCTAA AATAATGGAC ATATATAATT 116301 GGGGGAATAA ATCTCTTTTG TCACTTCTAA AATAATGAT AAAAAAGCAT
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44 CCO1 TCAAACTTCC CATTTCTAGT (1)(I ACAA GAIAGAACIG GGAAATIGGA
44CCE4 ACCE4ACCAAA AATTCTCTCC ACCIICACI IIIACCCIIO ICOTIONO
44 CZO4 TCACTAATAT TTCTTCAAAT ("IIII (IGG ALLAGALAAG GIGIIAAAG
44CTC4 TTTACATTC ATTTATTICE FLATILITIES CAUCAUCCCC ALGORIUS.
44COO4 CTATACTTAT CACTACTTTA LAALGAGAAA AALCAGAGC TATTI A LAALGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAA AALCAGAGAAAA AALCAGAGAAAA AALCAGAGAAA AALCAGAGAAAA AALCAGAGAAAA AALCAGAGAAAA AALCAGAGAAAAAA AALCAGAGAAAAAAAAAA
11COP1 CCCCCACATC ACATCCCTAA IAAIIGAAAA GICIAGAIII AAAIGA
44C001 CTCTCTCATT TCACAAATCA AG(
44COP4 AATAAAAATA TATATTETA AAIAIIIIA ILIUIUUIII IIAAAAA
447004 CTAACTCAAC TTACTTACCC IAACAIAIIC GAAAIGIIIC IIQQQIINII
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447304 TOOTTOATA CONTACTANG TAGGAATIGA CLAGAAAGAA CAAAAAAAAAAAAAAAAAAAAAAAAA
4473E1 TOTALALALALALALALALALALALALALALALALALALA
$A_{A} = A_{A} = A_{A$
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ALODOL TOACACACCC ACTCATTGGC AGAGGAIGAA ALLAAACCCA AGICIAGAAA
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Docket No.: CL001160DIV II
Serial No.: TO BE ASSIGNED
Inventors: Jane Ye et al.

Title: ISOLATED HUMAN KINASE ...

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144CE1 TCATTTCTC TATATCTTC TTTAGC(C) IGAGCATCTT TAAGATAGT
144701 CTCTTCATCT CTTTATCTAG TAGAICIACI GIIAGGICII IIIAAGGGAI
144701 GITTIGATGI CITTATCIAG TAGACTGA ATGAGCCATA CTTCTCTATT 144751 AGGTTTTTTG GTTTATGTTT TTTACTGTGA ATGAGCCATA CTTCTATATATG
144001 TOCTOCOATO COTTOTTATT TITIGIALIG GALACIIGAA ICIAAIAA
144801 TCCTGGCATG CCTTGTTATT GATTTCTCCC ATCCCCAGGG TTTGCTGTTT 144851 TGATAAATCT AGGAAAATCA GATTTCTCCC ATCCCCAGGG TTTGCTGTCTCC
144851 IGATAAATCT AGGAAAATCA GATTTITTAT TATTGTTGTA AGCTGTCTCC
144901 TITGTTATIG TITTATITIC TO THE TATALOG TO THE TOTAL AGAINST AND THE TOTAL TOTAL TOTAL AGAINST THE TOTAL TOTAL TOTAL TOTAL THE TOTAL
144951 ATGCCAAGGA TCAGCTGAGG TOTAGCACA GTCACTTTCT AATTTTCCCT 145001 TGAGCCTGCA CCCTTCCCTG GTCATGTGCA GTCACTTCT TGGCTCCCAA
145001 TGAGCCTGCA CCCTTCCCTG GTCATGTGCA CTTTCACGTG TGGCTCCCAA 145051 ACACATGCAG TTGTTTTTGA ATGTCCCAGC CTTTCACGTG TGGCTCCCAA
145051 ACACATGCAG TIGITITIGA ATGTCCCAGC CAACATTGTG 145101 AAGGAGGAAA GGAGAAAAAT GAAGAGGGTG AAAAGGTGCT GGCCCTTTAA 145101 AAGGAGGAAA GGAGAAAAAT GAAGAGGGTG AAAAGGTGCT GAACATTGTG
145101 AAGGAGGAAA GGAGAAAAT GAAGAGGGTG /GATTGTG CACCTCTGTG
145151 TTCTCCCAGA AGTCACTTCA GCCTGAGGGA GATTTTGTTTG CACCTCTGTG 145201 GGGGAGGTGC AACAACAATG GCCATCAAGC ATTTTGTTTTG
145201 GGGGAGGTGC AACAACAATG GCCATCAAGC ATTTAGAATT TGGAGAACAC 145251 ATCAGAAGCA GCAGTGTCGG AAGCACAGAT CCTCAGAATT TGGAGAACAC 145251 ATCAGAAGCA GCAGTGTCGG AAGCACAGAT CCTCAGAATT TGGAGAACAC
145251 ATCAGAAGCA GCAGTGTCGG AAGCACAGAT CCTCAGAG AACTGCTCCG
145251 ATCAGAAGCA GCAGTGTCGG ACTCTCACAG GCTGTGTGCA AACTGCTCCG 145301 AGTTCTTGCT TTCCACCCTG ACTCTCACAG GCTGTGGAGG ATGAGGGATG
145301 AGTTCTTGCT TTCCACCCTTA CACCTTA AGT TGGTCATAAT TAACTGCGCT
145351 GAACATGTGT GTGCTCAGCT CCCCTTAAGT TGGTCATAAT TAACTGCGCT 145401 GGTAGCTGCT GCTGTGCTAA GAGCTTGCA AGCTTTCAAT AGACTCCAGA
145401 GGTAGCTGCT GCTGTGCTAX GAGAGTTGCA AGCTTTCAAT AGACTCCAGA 145451 TTGCCACCCA AGCCTTCCCT GAAAGTTGCA AGCTTTCAAT AGACTCCAGA
145451 TIGCCACCCA AGCCTTCCCT GARAGETTCT GCCAGTGCAA TCGCTGTCTA 145501 GTTCTAAAAT AGTGACATTA GACAGATTCT GCCAGC TTCCCGGAAT
145501 GTTCTAAAAT AGTGACATTA GAGAGATTCCTG TTTTGCCAGC TTCCCGGAAT 145551 GGAGGGGAGA CAGATTCCTG GTGCTTCCTG TTTTGCCAGC TTCCCGGAAT
145551 GGAGGGGAGA CAGATTECTO GTGCAGGATA CTACTTACTT CTCAATTTGG 145601 CTTCTTCACA TAGCATCCAT TTTGAAGATTC
145651 GGCTATTCAT TGAATAGACT GTCACCAGGT TATTGGCTGT TTGAAGATTC

145701 TCATTTGTCT GCTAACTATA CCTCTATTTT TTTTCTACGT TCACCTGGAA
1 A COOL TITTE CAACAG AGAAAAGTAA GTAATTCCTG GGAGAACAAC AGCCCCAGAA
1 AFOF1 ATCCTCCCAT CTTTCACCCA GACTTTACTT GCAGAGAAAA TATATTITA
145001 ACATTETAAA AATTATTTTC TAATTGGGAA AAIGAIGCAA ICIAIIAIAG
145051 AAAATCTACA AACCTTTTTT GTAAGGTATT TAACAIIIII IAAIIGAIAA
14COOL ATTACCCTAC CATCAACTIT TTGTTTGTGA GAAGGGAAGA GGAALIAGGA
14COE1 TTTAAACACT TAAAAATCAA AGCCTTTTAA AAGAIIICCI IGGCICAIGC
14C101 TTATTTATAA ATTATTGGGC TTAATATTAT TICAAAAGCI TAAACCITIC
$\frac{1}{4}$
14C201 ACTANACACE CACTITANCA ANNGACACE ARAICIAGEE IIGGAACAAA
146201 AGTAAACAGG GACTTTAACA AGTGGTCAGA ATAACAACTT GTAAAGGCCT 146251 CCAAAGACCC ACAAGGTGAG GATGGTCAGA ATAACAACTTCT AATTACATAT
146301 CATGTCTTCT TCTTGGGACA ATCTCATGCC AGAAACTTCT AATTACATAT
146301 CATGTCTTCT TCTTGGGACA ATCTCTTGCCA CTCCACACAC CATGACTTAG 146351 GTCAAGAAAA GCTGACAGTA GTTCTTGCCA CTCCACACAC CATGACTTAG 146401 AAAATGTGAA TGAATATATT TCAAAAAAAGG CAGCACAACA CAGTGAAGGG
146501 TCTAGAGCAA GTCACTTAGC CACTTTCTGT GCTTTACTT ATATATATA ATATATATATATATATATATA
44CC01 CTTCTTATTC TAAACCCCCT TTAIIIIIAI IIIAAAAIIA AIAIAIQQQ
146601 GTTGTTATTC TAAACCGCCT TTATTTTAT TTTAAAATTA ATTATATATATATAT
146701 TOCACACAGG ACTCAGTGAG ACTTTTCAGA CCTCGAAAGT TICATAAAGT
1AC751 CCTCACAATC CCCCAGGCTA CTTGGATAAA GATAAGGAAI ICIAICAGGG
14COO1 ACCCATCAAT CCAATCAGAT TAAAAGTAAC AGAGATGGAT GAGGGCCTTC
A CORT CACTCATATO COTCAATOAG CATTAGAICE GUIIAIUICA GUIGGOOGA
ALCONI COCTOCTOTO CACACCACTT (CCAGCICC ICICAACAA IGIGAAAG
1 ACAE1 CTAACTTCAA ATTCCTAATA ATGGGGGGGGGAT TIACACCACG GAAACTGGTA
147001 AATCCTCCTT TTTTCCCTCC TAACAAGTGA AIIGCIAAAI AIIAGCCCAC
1 ANDEL CACTOCTTOC ARCARCATG TICCIIGAGG GCIAATIGIC CICIOCACAI
1 A 7 1 A 1 TA CCA CA CA C A CTCTATCTGG AGAGGA I CAG AAAAGAA I GI CA I CACACIO
147101 TAGCAGAGAC CTGTATCTGG AGAGAAAAG TTGCATCTTA TATGGGGTTT 147151 AAAGTATGTC CACCTTGCAG TTCAGAAAAG TTGCATCTTA TACCGTTGAA
147151 AAAGTATGTC CACCTTOCAG TICTAGAAGA TAGTAAAATT TACCGTTGAA 147201 ATTGTCTAAG TTAGAAATGA ATTTAGAAGA TAGTAAAATT TACCGTTGAA
147201 ATTGTCTAAG TTAGAAATGA ATTACCCAT AAAGTATATG GGAAGTATCT TTTCTCAGTA 147251 AAACCCCTTA AATTACCCAT AAAGTATATG GGAAGTATCT TTTCTCAGTA 147301 AAGCCCAATA CAGTGTCACC TTTCACTAAT GAAACAAGCC ATTGCTTATAC
147301 AAGCCCAATA CAGTGTCACC TITCACTAAT GAGACTAATAT TGGCTAATAC
147401 CACATCACCT AAAATCTTGA ACAAAIIAIA CIIGIIIIIA IAGACIAGAA
1 AT ACT TEACTCTETE TETTCTTTC AGG (AGAGIL ICACICIGIC ACCCAGGE)
4 APENAL CACTECACTE CENTENTETE TGETT ALL ALLIGUETUS COORTISMS
1 A T E S T T C A T T C T C T C T C T C C C C C C
1 AZCOL ACCATOTOTA COTANTITIT IGIALLILA GIAGAGAIAG GALLILOSIA
147CE1 ACCTCCCAC CTTCCTTTCA AACTCCTGG CTCAAGTGAT CCGCCCACCT
4 A 7 7 O 4 T C C C C T C C C A A A C T C C T C C G A I I A C A G G G G G G G G C C A C C A C C C C
1 A 7 7 E 1 TA CA ATTACT CTTAGA ACAG TGGA A IGULL ALALA ICUAA GACAGUAAG
1 A 7 D D 1 TTC A TC C A C A C T A A CC G A A C A G I G G I A I C A I G I C I C C C C I I G I C I C C C C I I G I G
4 4 7 0 E 1
147851 CITACIACAA GAATGGCAGG CAGATTTAT TTATTGATTT GCCACAAAGT 147901 GATGTCTCAC TCTTTTTCTT TATATTTTAT TTATTGATTT GCCACAAAGT
147901 GATGTCTCAC TCTTTTCTC GCAACCCCTA TGCCCCTGGG
147951 TTAATTCACC TAAGTGAGAC GTGGTTTTTTG GCAACCCCTA TGCCCCTGGG 148001 ACACAGATCT TTACAGAAGA ACTATTTTTG GCAACCCCTA TGCCCCTGGG 148051 TAGGGTCCAG AAGTGAACAG GCTTGGTGGG GGATTGTTTT CACCTCTTGG
4 ANA OA CTACTCACAC TACCTAAACC IGICCIIALI IAIGUAUAUC AIGICCACA
A ACTEL CONNENTECE ACTANGETGG CAACTGEGAA GALLIGALIG AIGULLAIII
140201 CCCAACCCAC CCAACTGAAA AIGGACCGAA GAAACAGAGA IGGCIGIGII
4 ADOLA TTATOCACCO CTTTTCCATA AAGAGGIIIAL ALIGUGGCAA CCAAGIAIG
4 40201 CTACAAACCC ACACCTAAAC TTCAGCIIGG CALICACAGI IIICICIICA
1402E1 CTCACCTAAT ACCCCCAGAG (((()()A() A() ()() ()()()() () () () () () () () () (
140401 CTAATACCAA CCATATTATT GTTACALAAL LAAAAGCCAG CICIIII'U''
1404E1 CTITCTTTCA TTCCTTTTCC CTACAGIICC CACAICAIII GICIGIGCIA
148501 TTCTGTTTTT CTCCAAACAC TATAAACTTG AAGCAATTGC CCTGACTCGA
148551 TTTCAGAGAA GGGGATG
(SEQ ID NO: 3)
FEATURES:
Start: 2003
Exon: 2003-2054

2055-22564 Intron: 22565-22567 Exon: 22568-39943 Intron: 39944-39999 Exon: 40000-41067 Intron: 41068-41219 Exon: 41220-79497 Intron: 79498-79500 Exon: 79501-86044 Intron: 86045-86218 Exon: 86219-105152 Intron: 105153-105190 Exon: 105191-113211 Intron: 113212-113301 Exon: 113302-123667 Intron: 123668-123765 Exon: 123766-132805 Intron: 132806-132922 Exon: 132923-133775 Intron: 133776-133848 Exon: 133849-134127 Intron: 134128-134155 Exon: 134156-134530 Intron: 134531-134545 Exon: 134546-135588 Intron: 135589-135601 Exon: 135602-137397 Intron: 137398-137526 Exon: 137527-145751 Intron: 145752-145816 Exon: 145817-146200 Intron: 146201-146291 Exon: 146292 Stop:

SNPs:

				_		
DNA Position Minor	Major	Minor	Domain	Protein Position	Major	
210 332 1131 1221 2011 4309 4345 4651 5037 5126 6048 6229 6328 6350 6382 6434 6722 6751 6752 7070 7306	GTTCGACTACG-GCGAACATT	AAATCCTCGTTTATT-GTTCC	Beyond ORF(5') Beyond ORF(5') Beyond ORF(5') Beyond ORF(5') Exon Intron	3	A	A

FIGURE 3WW

7220	Α.	C	Intron
7339 7531	A G	G A	Intron
8902	A	Ĝ	Intron
9471	Ĝ	Ä	Intron
10023	Č	Ϋ́	Intron
10594	č	G	Intron
11233	Ċ	Т	Intron
11295	-	ΑТ	Intron
11534	-	T	Intron
11757	T	C	Intron
11951	G	Α	Intron
12901	C	<u>A</u>	Intron
13040	C	T	Intron
13081	A	G	Intron Intron
13173	G C	T T	Intron
13272 13333	A	- G	Intron
13485	ĉ	A	Intron
13933	A	Ť	Intron
14086	G	Ä	Intron
14094	C	T	Intron
14141	G	-	Intron
14831	T	C	Intron
15319	T	C	Intron
15321	Ţ	C G	Intron
15335	A	G	Intron
15477	G	A C	Intron Intron
15650 15880	T	T	Intron
16944	C G	Å	Intron
17061	č	T	Intron
17494	Ğ	C	Intron
17642	T	Α	Intron
17737	Α	C G	Intron
18068	A	G	Intron
18339	C C	T	Intron Intron
18361 19218	A	ĠТ	Intron
19218	Ĉ	Ä	Intron
19629	C C	Ť	Intron
19679	Ğ	Α	Intron
19981	Α	G T	Intron
20014	C	T	Intron
20280	C	Ţ	Intron
20612	A	C T	Intron
21966	C T	C	Intron Intron
22017 28009	Ġ	A	Intron
28059	T	Â	Intron
28580	Ť	Ċ	Intron
28595	A	C	Intron
28823	-	A C	Intron
28827	C	G	Intron
28842	G	T	Intron
30128	T	A	Intron Intron
30150 30188	T C	G T	Intron
30453	T	Ċ	Intron
34990	Å	G	Intron
35203	Ğ	Ä	Intron
36206	G	Α	Intron
39692	C	Т	Intron

40095	Α	G	Intron
40191	Ť	č	Intron
40287	Ġ	Ä	Intron
40384	T	· Ĉ	Intron
40510	Ġ	Ä	Intron
	C	Ť	Intron
41664 48324	T	Ġ	Intron
48423	Ċ	Ť	Intron
50015	A	Ċ	Intron
50095	Ť	Ğ	Intron
52300	À	Ğ	Intron
52623	Ĉ	Ğ	Intron
52773	Ğ	Ā	Intron
53140	Ğ	Α	Intron
53848	Ā	T	Intron
57636	_	Α	Intron
57693	Α		Intron
58585	T	C	Intron
58649	T	T C C T	Intron
62188	Α	T	Intron
63478	G	Α	Intron
65457	C	Α	Intron
69947	Α	G	Intron
69981	C	T	Intron
71165	G	Α	Intron
71347	Α	G	Intron
71903	Α	G	Intron
71908	C	Ţ	Intron
71994	G	A	Intron
72010	T	C	Intron
72612	G	A	Intron Intron
73294	A	G	Intron
73385	C	G	Intron
74121	G	A G	Intron
75646	A	T	Intron
75698 70007	C -	Å	Intron
79007 80043	A	Ĝ	Intron
80499	Ğ	G C	Intron
80940	Ā	- T	Intron
81615	Ĝ	T	Intron
82599	č	<u>-</u>	Intron
82952	_	G	Intron
85020	Α	Т	Intron
88843	C	Т	Intron
89700	G	Α	Intron
90002	G	Α	Intron
90615	Α	G	Intron
92506	Α	G	Intron
92558	Ţ	C	Intron
92667	G	A	Intron
92803	A	T	Intron Intron
95079	T	A	Intron
95089	G	A	Intron
96495	G	A	Intron
97070	T	A C	Intron
99913	A	T	Intron
102375 102686	C	Ä	Intron
102687	Ā	ĉ	Intron
102087	Č	Ť	Intron
106162	G	Ť	Intron
TOOTOL	9	•	

FIGURE 3YY

Т	G	Intron	
	T	Intron	
	Α	Intron	
	T	Intron	
	G	Intron	
	G	Intron	
	C	Intron	
	T	Intron	
	G	Intron	
Α	G	Intron	
_	АТ	Intron	
T	C	Intron	
T		Intron	
G	Α	Intron	
G	T	Intron	
T	C	Intron	
C	T	Intron	
T	G	Intron	
C	Т		
C	Α		
G	Α		
Α	C		
T	C	Beyond ORF(3')	
	- T T G G T C T C C G A	TATGGCA-TTGGTAAC	C T Intron C A Intron A T Intron C G Intron A G Intron C Intron C G Intron T C Intron

Context:

DNA Position

[G,A]
CTTCCTTAGGGGTTTCATAAGTTCTTTTTCAATAACTCATCCTTAACACTTTCTCCAATT
CTGCCTGTAATCAATATTCCCTTCACATGTAAAGAGCTCAGGAGGAAATCAACTATTTTT
TTAAAAATACGCAATAAGGAAATTCTGCTACTCTTAGAAATAGCAGGAGCTAACATTCAT
TCTTTGCATATCATGTGCTAGGCATTGTGCCAATTACCTTATATACATTGTCTCATTATA
TGTATCCATGACCATATATGTGCTAAGCATGAAATTTTCTTAAGCCAGATAGCTGAGTAG

CCTAATTAATGACTCTCTTTGCTCTCTATTTAATGATTCTTGCTAAAGTCCATAAGGCAC
TTTGCCAGCAGTTGGTTTTTAGTATGAAAAGTAGCATTTCCTTAATGAGTCTGAGTCTGC
CTTCCAAATGAAGGGTTTACTTACATTTTCCTAATGGGAAAACGAGCTTTTCTTCTACGC
TTCCTTAGGGGTTTCATAAGTTCTTTTTCAATAACTCATCCTTAACACTTTTCTCCAATTC
TGCCTGTAATCAATATTCCCTTCACATGTAAAGAGCTCAGGAGGAAATCAACTATTTTTT

[T,A]

AGGACTGGAACACAGGATGCTGCCTCTCTTTACCATTATGTTTTAAAGTGGAGCAAAGCC
GTAGTTTTCAGGATCTTTTCTTGTTCACACATATCATTTAATTTGAGCCTCAGAGCGGCT
AACAGTTTTGAGCACTTATGCTATGAAAATGTTTTGTGTATTCAGTTAAATGTATGCATA
TCATACATTTATGTAACTCAATACATATATATAAAATGTGATATAAACATACGTATGATATA
ACAGAGTTATATATATGTGTATTTATTTAACTTAATATAAATGAGTTAAGTGTATGCATA

[T,A]

GGAAAGTACCATTATCTTCCCCAAGTTCAGAAGAAGAAAACAGAGAAAATATATTGAAATT

4345 CTTTAACTTATCAAATAGTAAAAGCAAAGATCTAGAGACTAGTGATATTACTTAATTTTT
CTGTCTCTAAAATGGAAAGACAAATAGGCTTGCTTTTCATTTAGTTGGTTTCCTCTGCTT
CCTCTGGACTCAGAGCTAATGTTGTACATGAGGCTGGTCGTCAGAGAATAGGGTGGAAAA
GAGAGGCCAGCTGCATACTTTTAACTTGCTGGGCTACATTTGAAGGTAGTAGAATAGCAT
TATGATGAGAAAACACAGAAATGCATAACCTTCCTTGATTCAGCCAGGCTTTGTTCTTG
[C,T]
GGGATGCCCAAGAAAGCTACATAACCAAAGAATTGTGACAATTGGGAAATAAGATACCCC
TTTTTAGTTACTTTAAAGGACTCTAGAAAAAACTAGGTTGAAGGAGAGTTAGGCTTAGGA
CCAGACAGGTCTTTCTTAACACCCTCTAGGTCACCACCTTTTCTGTTGTCTGGCTTCTCA
GCCCAATGAGATGAACCCACTGCAGCACCCATAAAGGAAAGATCTGAGCATAGCAACAAG
TCTGTGCCTCCCAAAGGTGCTAGGCTCTCTGTCTGTTTTATGCAGACAGTTGCAAGGCAAA

GCCCAAGAAAGCTACATAACCAAAGAATTGTGACAATTGGGAAATAAGATACCCCTTTTT
AGTTACTTTAAAGGACTCTAGAAAAACTAGGTTGAAGGAGAGTTAGGCTTAGGGACCAGA
CAGGTCTTTCTTAACACCCTCTAGGTCACCACCTTTTCTGTTGTCTGGCTTCTCAGCCCA
ATGAGATGAACCCACTGCAGCACCCATAAAGGAAAGATCTGAGCATAGCAACAAGTCTGT
GCCTCCCAAAGGTGCTAGGCTCTCTGTCTGTTTATGCAGACAGTTGCAAGGCAAAGGAAG
[T,C]
AGGAGGGCAAGTCCACCTACTATAAACCTGTCACTCTCTAGACATGAAGAATAGAGGAGG
AAACAAGTTGGTCCTTGCTCTGTCATTGTGAACCCCATGTTCTGATGATGGAAGGCTGAC
AATAAAAAGGTAAATAATACATAAACCAGATAATTTCACAGTGCCTTAAAGTGCCACCAA
GGAAATGACTCCTAGTGATCTTACAGACAGTGACAGTGATGGTGAGGAGGCCACTTTAGA
TAGGGTGGCTGCGGTTGTCTTTCTAAGGAGGTGACATTTGGGCTGAAGCCTGAAAGATGA

TTGTGAACCCCATGTTCTGATGATGGAAGGCTGACAATAAAAAGGTAAATAATACATAAA 5037 CCAGATAATTTCACAGTGCCTTAAAGTGCCACCAAGGAAATGACTCCTAGTGATCTTACA GACAGTGACAGTGATGGTGAGGAGGCCACTTTAGATAGGGTGGCTGCGGTTGTCTTTCTA AGGAGGTGACATTTGGGCTGAAGCCTGAAAGATGAGAAGAAGCCATCTATGAAATGACAT GAAAAGAATAGTTCAAGAACAGGAAAAACAAGTCCAAAATCCAAATAATGACAAAATCAG [A,G]ATTGAATAGTTGCCTATATCTTAACGTTCTCTCATGAGCACTAGTTTGCCAAAGAGACTG GCCATTCTAGGGAATTTACTTTGCTTTAAAATTCAGTACATTTTGTAAAGTTCATTTGAC TCTTCACATAAATCTGGATTGAGCACAAGGTAAAATTGTATCTGATTGCTGTGAAGCTCC TGACCAAGAAAAGCAACCAAAAAGCACTGATTAACCAAACAACATTAATGCTTATGTCA CACCAAGGAAATGACTCCTAGTGATCTTACAGACAGTGACAGTGATGGTGAGGAGGCCAC 5126 TTTAGATAGGGTGGCTGCGGTTGTCTTTCTAAGGAGGTGACATTTGGGCTGAAGCCTGAA AGATGAGAAGAAGCCATCTATGAAATGACATGAAAAGAATAGTTCAAGAACAGGAAAAAC AAGTCCAAAATCCAAATAATGACAAAATCAGGATTGAATAGTTGCCTATATCTTAACGTT CTCTCATGAGCACTAGTTTGCCAAAGAGACTGCATTTATTGCCATGTTAACTTATTTCTT [C,T]AAAAGATGATTGATTTGAGGAGAAAAAGTATGCCATTCTAGGGAATTTACTTTGCTTTAA AATTCAGTACATTTTGTAAAGTTCATTTGACTCTTCACATAAATCTGGATTGAGCACAAG GTAAAATTGTATCTGATTGCTGTGAAGCTCCTGACCAAGAAAAAGCAACCAAAAAGCACT GATTAACCAAACAACATTAATGCTTATGTCATTTTTGATATCCATATTTTTATATACATA ATCATAATGTATAATCAAACTGGGCCAGTATCAAGGGCACTAAAATGAGCCAACTTAATT **ATCTGATCTTGAACACATAATTTTATTAGTTACTTATGTTGATCTTTATTCAGCAAAAAC** 6048 AAAGTAGGAGATTTTCAGGCTAGGCATGGTTGCTTACGCCTGTAATCCCAGCACTTCAGG AGGCCGAGGCGGCAGATCACGAGGTCAAGAGATCGAAACCATCCTGGCCAACATGGTGA AACCCCATCTCTACTAAAAAATACAAAAAAAATTAGCTGGGCATGCCAGTGTGCGCCTGT AGTCCCAGCTATTCAGGAGGCTGAGGCAGGAGAATCTCTTGAACCTGGGAGGTGAAGTTT [G.T] CAGTGAGCTGAGATTGCTCCACTGCACTCCAGCCTGGCAACAGAGCAAGACTCTGTCCAA AAAAAAACGGCTTGCTTATTTGATTATATAAGATATCTTTCATAAATTAGATCTCAAATT ATACTATTGTTTTGCAGTTTTAGCTTTTATGTTTTTAGGGCAAATCTTAAGTCCTAATTAC TTTTTTTTTATTATTGTGGTAAAATGTATATAACAAAATGTACCATTTAATCATTTTAGA ATATACGGTTTATGACATTAAGCACATTCACGTTATCATGCAACCATCACCACTACCCAT ACCCCATCTCTACTAAAAAATACAAAAAAAATTAGCTGGGCATGCCAGTGTGCGCCTGTA 6229 GTCCCAGCTATTCAGGAGGCTGAGGCAGGAGAATCTCTTGAACCTGGGAGGTGAAGTTTG CAGTGAGCTGAGATTGCTCCACTGCACTCCAGCCTGGCAACAGAGCAAGACTCTGTCCAA AAAAAAACGGCTTGCTTATTTGATTATATAAGATATCTTTCATAAATTAGATCTCAAATT ATACTATTGTTTTGCAGTTTTAGCTTTTATGTTTTTAGGGCAAATCTTAAGTCCTAATTAC [-,T]TATACGGTTTATGACATTAAGCACATTCACGTTATCATGCAACCATCACCACTACCCATC CTCAGAACATTTCTCTCGAATTGAAACTTGGTACCTCTGAAACAATAACATCCACAT TCCATCCCCCAGTCCCTGTTAAACAACCATTTGACTTTATGTCTCTATGAATTTAA CTACTCTATGTACCTCATATAAATGGAACATATAAGATTTGTTCTTTTTGCATCTGGTTTA GAACCTGGGAGGTGAAGTTTGCAGTGAGCTGAGATTGCTCCACTGCACTCCAGCCTGGCA 6328 ACAGAGCAAGACTCTGTCCAAAAAAAAACGGCTTGCTTATTTGATTATATAAGATATCTT TCATAAATTAGATCTCAAATTATACTATTGTTTTTGCAGTTTTTAGCTTTTATGTTTTAGGG GTACCATTTAATCATTTTAGAATATACGGTTTATGACATTAAGCACATTCACGTTATCAT [G.A] CAACCATCACCACTACCCATCCTCAGAACATTTCTCTTCTCGAATTGAAACTTGGTACCT CTGAAACAATAACATCCACATTCCATCCCCTCCCCAGTCCCTGTTAAACAACCATTTGAC TTTATGTCTCTATGAATTTAACTACTCTATGTACCTCATATAAATGGAACATATAAGATT TGTTCTTTTGCATCTGGTTTATTTCATTTAGCATATATTTTTAAGGTTCATCCATGTTGC

AGTGAGCTGAGATTGCTCCACTGCACTCCAGCCTGGCAACAGAGCAAGACTCTGTCCAAA

AAAAAACGGCTTGCTTATTTGATTATATAAGATATCTTTCATAAATTAGATCTCAAAATTA

AGCATGTGTCAAGATTCTCTTTCTTTTAAGTCTGAGTCGTATTCCATTGTATGGATATA

TACTATTGTTTTGCAGTTTTAGCTTTTATGTTTTAGGGCAAATCTTAAGTCCTAATTACT
TTTTTTTTATTATTGTGGTAAAATGTATATAACAAAATGTACCATTTAATCATTTTAGAA
TATACGGTTTATGACATTAAGCACATTCACGTTATCATGCAACCATCACCACCATC
[C,T]

- CCAGTCCCTGTTAAACAACCATTTGACTTTATGTCTCTATGAATTTAACTACTCTATGTA
 CCTCATATAAATGGAACATATAAGATTTGTTCTTTTTGCATCTGGTTTATTTCATTTAGCA
 TATATTTTTAAGGTTCATCCATGTTGCAGCATGTGTCAAGATTCTCTTTTCTTTTAAGTC
 TGAGTCGTATTCCATTGTATGGATATACCACATTTTGTTTATCTTTTCATTAGTTGACAT
 TGATTGTCCTCACCTTTTGATTTTTGTGAATAAGGCTGCTATAAACATTGGTGTGCAAAT
 [A,G]
 TCTGTTCAAGTCCCTGTTTTCAATTCTTCAGGGTATATACCTAGAAGTGGAAGCACTGGA
 TCATATAATTCCTTGTTTGACTCTCTGAGGAACCATCATACTGTCTTCTACCTAATTATG
 CTTTGTGTTTTAGTAATGGGACACAGCCTGGCATGATGGGCTAGAGTATTGGAAAGGCAT
 GCACAGGTTCAAGTCTCAGCTGTCCACCATTATCAGACACTGGAGTCAGTTTCTATGAGAAGA
 GTCAAAGAGGATATAGCCTGGTCAACCATTATCAGACACTGGAGTCAGTTTGACTAATTA
- TATGTCTCTATGAATTTAACTACTCTATGTACCTCATATAAATGGAACATATAAGATTTG
 TTCTTTTGCATCTGGTTTATTTCATTTAGCATATATTTTTAAGGTTCATCCATGTTGCAG
 CATGTGTCAAGATTCTCTTTTTTAAGTCTGAGTCGTATTCCATTGTATGGATATACC
 ACATTTTGTTTATCTTTTCATTAGTTGACATTGATTGTCCTCACCTTTTGATTTTTGTGA
 ATAAGGCTGCTATAAACATTGGTGTGCAAATATCTGTTCAAGTCCCTGTTTTCAATTCTT

 [C,T]
 AGGGTATATACCTAGAAGTGGAAGCACTGGATCATATAATTCCTTGTTTTGACTCTCTGAG
 GAACCATCATACTGTCTTCTACCTAATTATGCTTTTGTGTTTTAGTAATGGGACACAGCCT
 GGCATGATGGGCTAGAGTATTGGAAAGGCATCACAGGTTCAAGTCTCAGCTGTCCACCAT
 TGCCAGTAATCTACATGTTTCTATGAGAAGAGTCAAAGAGGATATAGCCTGGTCAACCAT
 TATCAGACACTGGAGTCAGTTTGACTAATTATATGGTGTTCTAAGGAAACTTGAGGTACC
- 6752 ATGTCTCTATGAATTTAACTACTCTATGTACCTCATATAAATGGAACATATAAGATTTGT
 TCTTTTGCATCTGGTTTATTTCATTTAGCATATATTTTTAAGGTTCATCCATGTTGCAGC
 ATGTGTCAAGATTCTCTTTTTTAAGTCTGAGTCGTATTCCATTGTATGGATATACCA
 CATTTTGTTTATCTTTTCATTAGTTGACATTGATTGTCCTCACCTTTTGATTTTTTGAAA

TAAGGCTGCTATAAACATTGGTGCAAATATCTGTTCAAGTCCCTGTTTTCAATTCTTC
[A,T]

GGGTATATACCTAGAAGTGGAAGCACTGGATCATATAATTCCTTGTTTTGACTCTCTGAGG AACCATCATACTGTCTTCTACCTAATTATGCTTTGTGTTTTTAGTAATGGGACACAGCCTG GCATGATGGGCTAGAGTATTGGAAAGGCATGCACAGGTTCAAGTCTCAGCTGTGCCACGT GCCAGTAATCTACATGTTTCTATGAGAAGAGTCAAAGAGGATATAGCCTGGTCAACCATT ATCAGACACTGGAGTCAGTTTGACTAATTATATGGTGTTCTAAGGAAACTTGAGGTACCA

- TGGAAGCACTGGATCATATAATTCCTTGTTTGACTCTCTGAGGAACCATCATACTGTCTT
 CTACCTAATTATGCTTTGTGTTTTAGTAATGGGACACAGCCTGGCATGATGGGCTAGAGT
 ATTGGAAAGGCATGCACAGGTTCAAGTCTCAGCTGTGCCACGTGCCAGTAATCTACATGT
 TTCTATGAGAAGAGTCAAAGAGGATATAGCCTGGTCAACCATTATCAGACACTGGAGTCA
 GTTTGACTAATTATATGGTGTTCTAAGGAAACTTGAGGTACCACAAGAAAAGTCTCCAAA
 [T,C]
 CTAAATAATTACTAATGAATTAATTGAGGGGGAAACTTATTTAACCTTTGTAAGCCTCAG
 - CTAAATAATTACTAATGAATTAATTGAGGGGGAAACTTATTTAACCTTTGTAAGCCTCAG TTTCTTTGTATGTAAAATGCAGGTAATAATTGGGCATACTTCATTAGGTCTTTGTGAGGA TTGAATAAATAATGCAAGTAAAACACTTAGCAAAGTATTTCCCATAAAGTAACCACTCAA TTAATGCTAATTAAGTGTTATTTACTAACATCAGAGTTTCCTAGTGTGAACTCTTTGAAG TACTTTAAGTTCTGAGAAAAAACAAAATTAATTAAATGCAACTCTGTCGATTCCACAGTTA
- GTCAGTTTGACTAATTATATGGTGTTCTAAGGAAACTTGAGGTACCACAAGAAAAGTCTC
 CAAATCTAAATAATTACTAATGAATTAATTGAGGGGGAAACTTATTTAACCTTTGTAAGC
 CTCAGTTTCTTTGTATGTAAAATGCAGGTAATAATTGGGCATACTTCATTAGGTCTTTGT
 GAGGATTGAATAAATAATGCAAGTAAAACACTTAGCAAAGTATTTCCCATAAAGTAACCA
 CTCAATTAATGCTAATTAAGTGTTATTTACTAACATCAGAGTTTCCTAGTGTGAACTCTT

 [T,C]
 GAAGTACTTTAAGTTCTGAGAAAAACAAAATTAATTAAATGCAACTCTGTCGATTCCACA
 GTTAATTAGACCTATTCATGTTTCTATTGACTGGATTAACAGAACGGCAGATTTTATGGA
 TTCTGTTAAAACCTATATAAAAAACACTTTAAAAGAAGCCAAGTTATTGACTGCACAAAAA
 CATAATCTCATCTGATATCTTTTTTATCCCCCTGAGGTTATTGTGTTTTTTAAGGCA
 AAATCAAGAACTAATTGGGATGAAAATAACTAAAGTTTACTTTGTCTGATTTAAGTCCCA

- AAGTCCAATTTATGGCAAGGGTTTTAATTTGTAAGGGCTTTATTTCTCCATACAAAGGGA
 TTGGAGAAACAAACTAGAAAGCCAGAAAACAGACCACAAACACTGAGCTAGTGGTTCCAA
 CTGGAGTGTTCCCTGAGCAGTGACTTATGAATACTTGTTTAGAAGAATCAACTCAAACAA
 ATTTAGGAAAGTCACATCCTGCCTTTAGAGCTTCCAGTGTTTTAGTTAAAGTCT
 CTGAAATGACCTACAATATTGAAATCTCAGTCTTCTGCTATTTTTAATATTTTCAAA
 [A,G]

FIGURE 3DDD

9471 GCATAATITATATCTATITGGTITAATGAGTACAACACAAGATAGCTCAGTTTAATTCTG
GGATGTTGGATGTTTCTAGTTAAAGTACAAGTTGGATTTGATGAAAATTCATTGCTTCTT
TATGATTTTTTAAAACTCAAGAACATGTTAGTTAAAGAGTGTCTTCTGAACAAATTCTTG
TGAAGTAGTTGCTGATTATTAAGTAACACTCATGCTACCGTAACTTTTTATACTATCCAA
AGCTATAGACATTTTTAATTTTCAACTTGCAACTACCTAGGTTGAAAAAATTAAATCTGCA
[G,A]
GCCAGTTTCATTATTCAGACAATTTGGTTATCACTTCAAGCCTACTATCTTCAAAGAAAA
TGGGAGTGCAGGCCTTCATGGGAGCTGACTTCTGCTGTATGGCCTTGCAAATGTCAACTC
GATTAGAGTGACCAGTGTTAGCCCTCAATTCACAAACTCAGGTCCCATGAAATATACACG
GATTTCTACTATGCATTACTATGTGACCATTCATGGAAGTTTCGTTTGGAAACACAGACA
TTAAAAAGCCAGTCATGGAATAACATTCTTGTTAAAAACAGGACATTGGCAAAAAAGGACTA

11233 CATCCAACAGTTGATGTTGATCCCCCCATCCTGCCCCACTGTTCTACTTTGCAATTTGTT
TGAAAGAAATTGTCAATATATTTCTGACTTCTGAGCAAATCCATGAATCGGGATCCAGCA
ACAGGAAAAGAAGCTGTTGCTGCCCCATTGCTTGGTTTTTGGCACCAGGAATGGATAAATCC
CAGACTTCCTGGGGCACGTGTTTTATAAAAGGGAAGTGCTGACAGTGCAAACAGCTGCCA
TCAATTGGCCTTGGAGACTACTTCCCTGGAGAAGCTCCAATTATATTCTTAAAGGACCCA
[C,T]
CAAGCTCTTCAAGTGTTAGTGGCAACCATTTGCTGCCAACCATTTGAAATGATGAAGTAA
TTTTTTTTTATTAGTGGATCCTAAGTGATAGGCTCTAGAACTGATCTTCAACCTTAACTA
ATATCATGGCATCAGAGGGCTACAGATTAAATCAGTGGTTCCCAGTCACTCTCTGTGGAC
AAGTAGCAACTACGACAAAGCTTTTCTTAGTCTATGGTGGAAGAGAAAAATTAAGGACAAT
GTAATAAGCATCCCATAAACTTATTAAAACCTATTAAAATTTAATTTTAAGATTATGTCAT

11295 AAAGAAATTGTCAATATTTTCTGACTTCTGAGCAAATCCATGAATCGGGATCCAGCAAC AGGAAAAGAAGCTGTTGCTGCCCATTGCTTGGTTTTTGGCACCAGGAATGGATAAATCCCA GACTTCCTGGGGCACGTGTTTTATAAAAGGGAAGTGCTGACAGTGCAAACAGCTGCCATC AATTGGCCTTGGAGACTACTTCCCTGGAGAAGCTCCAACTATATATTCTTAAAGGACCCACC AAGCTCTTCAAGTGTTAGTGGCAACCATTTGCTGCCAACCATTTGAAATGATGAAGTAAT [-, A, T]
TTTTTTTATTAGTGGATCCTAAGTGATAGGCTCTAGAACTGATCTTCAACCTTAACTAAT ATCATGGCATCAGAGGGCTACAGATTAAATCAGTGGTTCCCAGTCACTCTCTGTGGACAA

- GGGGGCTAATAATAGTATCTGTCTCATAGTTTTTGTGAGAATAAAAAAATTGTCCAGGTA
 AAATGCTTAGCTGGTGACTGGCACACAGTAATTGCTCAATAAATGTTAGCTATTATTGCT
 ATCATTATATAATCATCATGGTTTCCAATGCCTTTACTTGGCAAATAAAAGAACAAAAGT
 CACCCGATATTGATCTCCCTTTTCTTCCCTAGTTTTCTGGGGGGGTGGGAGGCAGAGACCG
 AATTTTCTGATCTGTGAAATCTGAATTTATCATTGTAATTTTCCATAAGTGCTATGTAGA
 [G,A]
 AACTCATTTAAGTTGCTGGGATGAAAAAAAAATCAAAAAGTGGCCTATTGTGCTGGGTGCAG
 TGGTTCACGCCTGCAATCCCAGCACTTTGGGAGGCTGAGGGGGGTGGATCGCCTGAGGTC
 AGGAGTTCAAGACCAGCCTGGCCAACATGGTGAAACCTTGACTCTACTAAAAATACAAAA
 ATTAGCCTGGCATGATGGTGGGCACCTGTAATCCCAGCTACTCAGGAGGCTGAGGCAGGA
 GAATCCCTTGAACCCAGGAGGTGGAGGATTCAGTGAGCCGAGATCTACTCCAGCC
- CAGTGTGGAGACCAAGGAGAAGAGGAATCCTAATATTTAGAAACAAGGCAGTGGATAGCA
 ATCTAGCTATGGAAAGTGGAAGGAAAGAGATAGTTGATCATCCAGTTCAACACTACTCTT
 GTTGTAGTTCACTTATGTTGAATGCTTCTGTGTGACTAAGTCGGTGAGAAAAATCTATGG
 GAGTAGGCAACATGGAGGATGTTGGTATTCACAAAAGCAGTTTAGTGGAGTGTGGAGGCC
 TGAGCCAGACTAGAATGAGTTAGGAGTAGAATGAAGAATAGAATGCAGATATGGGCCCAG
 [C,T]
 GCGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCCAAGGTGAGCAGATCACAAGG
 TCAGGAGATCGAGACCATCCTGGCTAACACCCGTGAAACCCCATCTCTACTAAAAATACAA
 AAAATTAGCCGGGCCTGGTGGCGGGTGCCTGTAGTCCCAGCTACTCGGGAGGCTGAGGCA
 GGAGAATGGCGTGAACCCCGGGAGGTGGAGCCGAGATGGTGCCACTGCAC

- CATCAACACCCACCTCCATATCCAGATATTGAGTACCTCAGGGAGTTCAATTTGGAAGCA 13933 AATGATGTGAAAATGTACTTTACTATCCAGTAACATTCTTGTTAGGGAGTGTTGGCAGAG ATTGTCGAACAACCATAATGCATTTTATCATTCGATCAGTCTACAATTTAAACATAGCAG GACTGGACAGAGGCACAGGAAGATTAAGCCACTGACCTTAAGTCAGACAGTCACATGGGT AGATCCGGAATCTTGATCTAAAATGAATACCATTTTTTCAGTTATAGCTATCTTCCCAGG [A,T]AAGAATACATCAAACACCCATTATGTGCCTAACTCTAAATCTTACTTTCAGAGAGCTAAA AACAATTTCACAGTGACATTCATCTTCGCTTCTGCCGTAACTCACATGCATATGC CTTAGACCACATTATTAATGAAGTATTGGGGGGGTTCCATCTAGAGCACCTTTTCTTCCCT GGAGTTAATCATCCAGTTCAGCACCACTCTTGAGCTTTGCTTAGCTTCTTCTACCCATTT GATCAGTCTACAATTTAAACATAGCAGGACTGGACAGAGGCACAGGAAGATTAAGCCACT 14086 GACCTTAAGTCAGACAGTCACATGGGTAGATCCGGAATCTTGATCTAAAATGAATACCAT TTTTCAGTTATAGCTATCTTCCCAGGATGGCCAACCAGAATGCATATATAAAATTTCAA AAACAAACATTGGGAATTGCTCTTCAGCAAGAATACATCAAACACCCCATTATGTGCCTAA CTCTAAATCTTACTTTCAGAGAGCTAAAAACAATTTCATTTCACAGTGACATTCATCTTC [G,A]CTTCTGCCGTAACTCACATGCATATGCCTTAGACCACATTATTAATGAAGTATTGGGGGG TTCCATCTAGAGCACCTTTTCTTCCCTGGAGTTAATCATCCAGTTCAGCACCACTCTTGA GCTTTGCTTAGCTTCTTCTACCCATTTGGATTTTAAGGACAACAATTCCAATGGCCTTTA TCCATGTATTTAACAATTCATTATGAGCCAGGTGAAGTGGATCACACCTCTAATCCCAAC ACTTTGGGAGGCTGAGGCAGGTGGATCGCTGGAGCCCAGGAGTTCACAACCAGCCTGGGC TACAATTTAAACATAGCAGGACTGGACAGAGGCACAGGAAGATTAAGCCACTGACCTTAA 14094 GTCAGACAGTCACATGGGTAGATCCGGAATCTTGATCTAAAATGAATACCATTTTTTCAG ATTGGGAATTGCTCTTCAGCAAGAATACATCAAACACCCATTATGTGCCTAACTCTAAAT CTTACTTTCAGAGAGCTAAAAACAATTTCATTTCACAGTGACATTCATCTTCGCTTCTGC [C,T]GTAACTCACATGCATATGCCTTAGACCACATTATTAATGAAGTATTGGGGGGGTTCCATCT AGAGCACCTTTTCTTCCCTGGAGTTAATCATCCAGTTCAGCACCACTCTTGAGCTTTGCT TAGCTTCTTCTACCCATTTGGATTTTAAGGACAACAATTCCAATGGCCTTTATCCATGTA TTTAACAATTCATTATGAGCCAGGTGAAGTGGATCACACCTCTAATCCCAACACTTTGGG AGGCTGAGGCAGGTGGATCGCTGGAGCCCAGGAGTTCACAACCAGCCTGGGCAACATGGT CCACTGACCTTAAGTCAGACAGTCACATGGGTAGATCCGGAATCTTGATCTAAAATGAAT 14141 ACCATTTTTCAGTTATAGCTATCTTCCCAGGATGGCCAACCAGAATGCATATAAAAAT TTCAAAAACAACATTGGGAATTGCTCTTCAGCAAGAATACATCAAACACCCATTATGTG CCTAACTCTAAATCTTACTTTCAGAGAGCTAAAAACAATTTCATTTCACAGTGACATTCA TCTTCGCTTCTGCCGTAACTCACATGCATATGCCTTAGACCACATTATTAATGAAGTATT [G,-]GGGGGTTCCATCTAGAGCACCTTTTCTTCCCTGGAGTTAATCATCCAGTTCAGCACCACT CTTGAGCTTTGCTTAGCTTCTTCTACCCATTTGGATTTTAAGGACAACAATTCCAATGGC CTTTATCCATGTATTTAACAATTCATTATGAGCCAGGTGAAGTGGATCACACCTCTAATC CCAACACTTTGGGAGGCTGAGGCAGGTGGATCGCTGGAGCCCAGGAGTTCACAACCAGCC ACAATTTATTTCATCATCATCATCATCATCATTGTCACTGCTCACTCTTCAACATTTTTT 14831 TGAAGTTTTTGCCACTTTGATAACTTCTTCATTTTCTGTCCAGAGTATAACATACCAGGG AAAAGGCTCTAAAATAAGGCTTGAGGTATTAAAAAAGATCTTCTGTTTAAGTCTTATGTTC CTAATCAATAACTAGAATTGGCCTGATTGCTTTCCTCAGTGGGTTTTCTGGTAGTCCTGA [T,C]ATGATATCGAGGCTGTCATATAGTCCTGAAATATCCTATCATTAACATTTGTGGTGGTAT CTGATATAAAGGTAGATGAACTTCATTGCAGCTATTCTTAGGAAATGCGTATTTAAATGC ATAGTTAAAAGCAAGATTTACAATTATAGAAGGAATGCAAATGAGTTGTAGAAAGCTCAT AAAATAAAAATCAAGAAGAAGAATTACCCATCATGCCTCAGCCCAGTGATAACCACTGC TAATATTTTTGGCTGTTTTCATTTGCAACCCCATCTCCATTCTAGCAGCCCTCATCCCTC
 - 15319 AAATCAAGAAGAAGAATTACCCATCATGCCTCAGCCCAGTGATAACCACTGCTAATATT
 TTTGGCTGTTTTCATTTGCAACCCCATCTCCATTCTAGCAGCCCTCATCCCTACCCA

- 15335 ATTACCCATCATGCCTCAGCCCAGTGATAACCACTGCTAATATTTTTGGCTGTTTTCATT
 TGCAACCCCATCTCCATTCTAGCAGCCCTCATCCCTCCTACCCACTATGTTTTTCACTAT
 ATTTCTTGTTTAAATTTACTTAATTATTTTGTTAATTATTTTTCCTCTCACTAGAAAGT
 GAACTCCATGAGGGCCAGGGATTTTTGCTATTTTGTTCACTTTTGTATCCTTAGCACCTA
 CTTTGTTGATTAAGTGAATGCATTAATGATCTATTTTTAATCTGTGTATGTGTATAAAAG
 [A,G]
 CACTTGATATATCTGGGATGATATTCAATATACTTTTGTATCCTCATTTTCACCATAGGT
 AGTTTATGTCAATTCCTTGAAATTTGTTGATTTTCTTGAATAATTTAGCAGTTGTACAAT
 TCTAAAACATAAATATAATTTGCTTAAATATACATACCATTTTTAAACATATTTAAATGTG
 AAAATACAGTTGAGTTCTCTTAGATTGCAATTTTGTAACTTTTTGATAATCCTTTGATCCT
 GAAAAAAATTTTTTTGGCATGAGGGAAGAGATGAATATTTCTTTTTGGAGTATTTAAATCAT

TGCTGTGGAGGTTTCTGTACGATTTACTCAAAGCTGGCTCTTTTTCTGTACGCACTACCA

[C,T]
GCCCGGCTAATTTTTTGCATTTTTTTGGTAGAGATGGGGGTTTCACCATGTTGGCCAGGCT
GGTCTTGAACTCCTGATCTCAAGTGATCCACCCACCTCAGCCTCTCAAGGTGCTGGGATT
ACAGGCATAAGCCACCATGCCCAGCCTGCATTTATCCTTACATGATGGTGAAAAAATAATG
TTTGTACTTCCTTCAGAATAATTTCAAGAAGGATCCCTGGAGTCAGCTAATGATTAGAGT
CAGGACTGTGCCTTAGTTGATGGCCCATATAGCACTACTGAACATGCCAGAGCTTTTGCT

FIGURE 3JJJ

CATTITTATGAGCCTCTGCATCTACTTACGGATGCACAGTATGACACAGCACCCGACAAG AATAAGTCCACCTATTACGGCTGCGAGGGAAGTAAGAATTGAGGCTATTATTCCTTCTCA TTTACCAAACTACTTTTCTAGCCATCTTATAAAGGGGTCATTTACCCCCTGAGTTGCTGGC TAACTTATTGGATAGAGCAGTCAGACCATGCAGTGCCTTTCTAATACTTCCATTAGGGGC AGTGTTGTTTGGGATGAAGTGCAACATTGAGTTTTAATTATGATGCAAACTACCCCTCT

18068 GATGCACAGTATGACACAGCACCCGACAAGAATAAGTCCACCTATTACGGCTGCGAGGGA AGTAAGAATTGAGGCTATTATTCCTTCTCATTTACCAAACTACTTTTCTAGCCATCTTAT AAAGGGGTCATTTACCCCTGAGTTGCTGGCTAACTTATTGGATAGAGCAGTCAGACCATG CAGTGCCTTTCTAATACTTCCATTAGGGGCAGTGTTGTTTGGGATGAAGGTGCAACATTG AGTTTTAATTATGATGCAAACTACCCCTCTTTCTGCTACTATCATGTCTAAGGCTATTTT [A,G]

19218 CTTGTTGCCCAGGCTGGAGTGCAATGGCGCAATCTTGGCTCACTGCAACCTCTGCTTCCC AGGTTCAAGCAATTCTCCTGTCTCAGCCTCCCGAGTAGCTGGGATTACAGGCATGCACCA CCATGCCTGGCTAAGTTTGTATTTTTAGTAGAGACGGTGGTTTCTCCATGTTGGTCAGGC TGGTCTTGAACTCCCAACCTCAGGTGATCCCCCTGCCTCGGCCTCCCAAAGTGCTGGAT TACAGGCGTGAGCCACCGAGCCTGACCTGTTTTAAGTCTTTAGTTTTTACAATAGCTATC [A,G,T]

19298 TCTCAGCCTCCCGAGTAGCTGGGATTACAGGCATGCACCACCATGCCTGGCTAAGTTTGT
ATTTTTAGTAGAGACGGTGGTTTCTCCATGTTGGTCAGGCTGGTCTTGAACTCCCAACCT
CAGGTGATCCCCCTGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCGAG
CCTGACCTGTTTTAAGTCTTTAGTTTTTACAATAGCTATCTTGGTCTTGTTTAGATGG
AGGAGGAGCAACTGTTCCGTTGTGAGAGGTTTTGGAAGAAGGCTTACAGGAAGGTGCAGG
[C,A]
GGTGGGGATCAAAGAAATGCATTTTAAATAATCTAATAGGGTTTGTCCCTGAAACCTCAG

FIGURE 3KKK

CCCCTATAGCATAAAACTGACTTAAAGAAGGGAACTGGCTTAGAAAAGGGGAAGAAATTT

GATGACAGTCAGGAGGCACAGAGGTATTTTTTCTGAAATAGAGAGGTGTCTTTGACTTGG
CAAATCCCCACAGGGTATAACAAGGCAAGCATTAAGTGCAATAGTTTGAGGCAAAATTGA
CTTGGTTATGTTAATAACTAGATGGTCAGCAATAGAGCCAGTAAAGAAGAAAAGAGTAATA
GAATAGATAAAAGAGAGTTAAATTTTTCTTAGCTTTAGTTTGGCAGGGCTTTCCCCTGGG
GCTGTGGCCCACAACTCTGGAGGGGGCGCGCGCTTTCTTGACTCGGGTGTGATGAGTCCAT
[C,T]
CCTTTTTCACTGTAGAAACAGCAGTCTTGGTGGTGAGCAGCACAAGGTAGGGTCCTTCCC
AGGCTGGCTCGAGTTTTCCTTTCTCACCCCTTTGATAAGAACGTGATCTTCAGGCTGGT
GTTGGTTTACCGGAAATTCTAGGGGTGGTACCTGTGCTAAAAGACTTTTAGTTTTGAGGG
AAAGGAAAATGGAAGATAAACCAAGTATATAATTTCTAAGAAATGGACCTTTTTTTAA
ATGTGGGGACATCAGCAGTGGACTTTATAGTCCTTGGTGCCTTTTTTACTGAGAAATTTCC

FIGURE 3LLL

CTTTTTAACCTTTTATAATTTTTTGTTAAAGAGCAGGTTAGTGCTTTAAGAAATACCTGTT

AAAAATGGGTAAAGTGCCAGCCGAACTTAGAAGAGGGACTGATTCTATCTCTATTCTGAC
CAGGTATACGGTAGACTGTAATTTAATGTCAGCACCTTTCTGTTGCCATAATGAGGTATA
TTTATTTCTGTTCAAAGATCATGCAGCCCTGACAAAGCAAATACCCTCTGACTCCCACTG
TTAATTATCCTTCAGTTGCTACAGGGTTTTCATCCATGTCCTCACTTAGGAGAGTTGGCG
GTTGTGAAGCAGATGGAGTCCACAATCTCAGTGGCAGTTCTTAATGCTTTGAGCTCAAAG

FIGURE 3MMM

CCCAAATCCATCCTTTTTCTGTAGAACTTTAATGATGATACCTCATTCCTTTGTAACTTA 28580 ATTTTAAAAAGTTAATTATGCACCTACTATGATACGTCCAAAATGTTTTTAGGTGATGTG GATATAGCGAAGAACAAGACACCCAGTGTCTTCCTTCATGGAGTCTATATTCTTGGCA CATTGGCTGGGCGTGATGGCTCATACCTGTAATCCCAGCACTTTGGGAGGCTGAGGTGGA [T,C]GGATCACCTGAGGTAGGGAGTTCAAGACCAGCCTGATAACATAGAGAAACCCTGCCTCTC CTAAAAATACAAAATTAGCCAGGCATGGTGGTGCGTGTCTGTAATCCCAGCTACTCTGGA GGCTGAGGCAGGAGAATCACTTAAACCTGGGAGGCAGAGGTTGTGGTGAGCCGAGATTGT AACCAACAGGCAACATTCTGGGCTGAAACAAAGGTAATTCATCTGGTAACAATAGCAATA TTTCTGTAGAACTTTAATGATGATACCTCATTCCTTTGTAACTTAATTTTAAAAAAGTTAA 28595 TTATGCACCTACTATGATACGTCCAAAATGTTTTTAGGTGATGTGGATATAGCGAAGAAC AAGACACCCAGTGTCTTCCTTCATGGAGTCTATATTCTTGGCACTGTTGGTCCTGTGT GAAGTCCTAACATTATTTTGCTTAATGTTTTGGCAAGAGAGGCAACATTGGCTGGGCGTG [A,C]GGGAGTTCAAGACCAGCCTGATAACATAGAGAAACCCTGCCTCTCCTAAAAAATACAAAAT TAGCCAGGCATGGTGGTGCGTGTCTGTAATCCCAGCTACTCTGGAGGCTGAGGCAGGAGA ATCACTTAAACCTGGGAGGCAGAGGTTGTGGTGAGCCGAGATTGTGCCATTGCACTTGTA TTCTGGGCTGAAACAAAGGTAATTCATCTGGTAACAATAGCAATAACATAAAATAGCAGTA TGGCTGGGCGTGATGGCTCATACCTGTAATCCCAGCACTTTGGGAGGCTGAGGTGGATGG 28823 ATCACCTGAGGTAGGGAGTTCAAGACCAGCCTGATAACATAGAGAAACCCTGCCTCTCCT AAAAATACAAAATTAGCCAGGCATGGTGGTGCGTGTCTGTAATCCCAGCTACTCTGGAGG CTGAGGCAGGAGAATCACTTAAACCTGGGAGGCAGAGGTTGTGGTGAGCCGAGATTGTGC [-,A,C]CAACAGGCAACATTCTGGGCTGAAACAAAGGTAATTCATCTGGTAACAATAGCAATAACA TAAATAGCAGTAATAATTATACATTATTGAGTTCCTATTCTCTGCCAAAAATGGTTGATA AGCACCTTTGATATGGCTTATTTTACCTAGTCCTCATTATAACCTTAGAAGGTATATTGT ATCTGGTCAAAATTGAAAGAAGAAATTGAAACTCACAGAGGGTAAATAATTAAAGTTCAT AGCTAGTAAGTACAGACAAACCCAAAAGCAGAGTTTCATGCTCATAGTCACCATAAT 28827 CCTGAGGTAGGGAGTTCAAGACCAGCCTGATAACATAGAGAAACCCTGCCTCTCCTAAAA ATACAAAATTAGCCAGGCATGGTGGTGCGTGTCTGTAATCCCAGCTACTCTGGAGGCTGA GGCAGGAGAATCACTTAAACCTGGGAGGCAGAGGTTGTGGTGAGCCGAGATTGTGCCATT [C,G] AGGCAACATTCTGGGCTGAAACAAAGGTAATTCATCTGGTAACAATAGCAATAACATAAA TAGCAGTAATAATTATACATTATTGAGTTCCTATTCTCTGCCAAAAATGGTTGATAAGCA CCTTTGATATGGCTTATTTTACCTAGTCCTCATTATAACCTTAGAAGGTATATTGTATCT GGTCAAAATTGAAAGAAGAAATTGAAACTCACAGAGGGTAAATAATTAAAGTTCATAGCT AGTAAGTAGTACAGACAAAACCCAAAAGCAGAGTTTCATGCTCATAGTCACCATAATGTAT 28842 TCAAGACCAGCCTGATAACATAGAGAAACCCTGCCTCTCCTAAAAAATACAAAATTAGCCA GGCATGGTGGTGCGTGTCTGTAATCCCAGCTACTCTGGAGGCTGAGGCAGGAGAATCACT TAAACCTGGGAGGCAGAGGTTGTGGTGAGCCGAGATTGTGCCATTGCACTTGTACTCCAG [G,T]CTGAAACAAAGGTAATTCATCTGGTAACAATAGCAATAACATAAATAGCAGTAATAATTA TACATTATTGAGTTCCTATTCTCTGCCAAAAATGGTTGATAAGCACCTTTGATATGGCTT ATTITACCTAGTCCTCATTATAACCTTAGAAGGTATATTGTATCTGGTCAAAATTGAAAG CAAACCCAAAAGCAGAGTTTCATGCTCATAGTCACCATAATGTATTCAGAAACTTTTAGG GGCCAATGAATCTGAATTTAAAAAACATGTATTTGTGTGATTTTGATGGGTGGACACACTT

FIGURE 3NNN

GAGAATCACGTCAGGACCATTTATGTGGCTCTCAATTACATATACACTACTTTATATTGC

30128

AGTTGTTTATTTATGTTATATTGCAGTTATTTATTTATGTTTCATCTCTTTTCCTGAGAA ATTACCTTCCTGATAATCCAATGCAGAGATAAATTAAGAAAATCTGTAGGAAAGAATAGA TCATCAAGTCCCTTGCAACATTCTTCTGAGGTTGTAATAATCTCCTCTAGGATGCTTTGC [T,A]

- AACATGTATTTGTGTGATTTTGATGGGTGGACACACTTGAGAATCACGTCAGGACCATTT
 ATGTGGCTCTCAATTACATATACACTACTTTATATTGCAGTTGTTTATTTTATGTTATATT
 GCAGTTATTTATTTATGTTTCATCTCTTTTTCCTGAGAAATTACCTTCCTGATAATCCAAT
 GCAGAGATAAATTAAGAAAATCTGTAGGAAAGAATAGATCATCAAGTCCCTTGCAACATT
 CTTCTGAGGTTGTAATAATCTCCTCTAGGATGCTTTGCTGGATTTCCCTGGACTAGGTTG
 [T,G]
 CTTTTCCTGCTACTTTCTCCCATTACAGGTCTCCCTACGGCAGCACTGCTTATATCACTT
 GGAACTTGAATCTATTTTGGTAAAAAAAAAGTTAAAAATTAAATTATCAGAAGGATATTG
 GGGATGCCTGCAGAGTAATCAAAATAGGATCTATATTGTTATAGAGCCAGGCACATTAAT
 GCCATCAGCTTTAGCCCTTTATGTTGTGATTTTACTTTATTCCAAATGTCAGCTTTATCC
 TGTTGGATGTGCTGATCTTTTTTCTCTACATTCAGCCCAGTTCCATTCTCATGTTCTGGAA

- 35203 CTGAAATTCCAAGCATCAGGGTGTTATAACAGACTCTAAAAAGGGTTTCCTTTTTTCTTT
 CCTTTAACATTGCTTATTGCACAGCATATTGAGACAGAAGAAGATGGTAAGTGAAATAAAA
 CAAAGGAAATAAAAAGTATCATCACTGGGTTTCAGAATCAGCATGGTTTATGCTAAGGGA
 AAGACTTGGAAACCTTGATTCAACATATAATTCTAAAAAAGAGACAGGAAGAAATCCCACC

FIGURE 3000

TTGTTTCCTCTGATTCTACCTTTGGGATGGGTAGGTATGTTATACAATAAGAATAACATT

[G,A]
AGATGACTGCTATAAAAATAGTGGTTAAGAGCCTGGGTCCAGAATGAGAAAGGTGGATAT
TGAATTTACCTGAGTGCAACTAGGCAGACTCAAGTGAGTTGATTTTACCCACTCCTCCAC
TCAAATACTGGGTATGGCTTTGCAAAAACATTCAACCAGTTATCCACATAGTTGGTCTTA
ACTTTCCATGTGACTATAATGAATATAAACTTGCTAATGAGCAGAGTGTGATTTTAGTGT
TTAAACTATTTTTTCCCGAATAATAGTTCCTAGATGCAGTTAATGAGCCTTATTGGGTAC

39692 AAAATTGAAATTACTTAGATACAAAAGAGTGGTTGTAGTAAGAAAATAGGCAAGGAGAAC ATTTTAAAGTGCTGATCCTCGGTAAAGCCATACATAGGATGCACCTGGGAGCAGATCTTT CTGAAGTCATTCTGTGCTCAGAGATGTTTCTCCTTACCTTGCTGCCTATGTCAAATTCTC TGTGATATGTTCTTAGAGCCCCATGACCTCTCTTCTTAACTTGCAGTGGGAGCTTGAATT TTCCATTTATTTTTGTGACCATTTAGTCTATAAGAGTCTCCGTCTTTACAGGGCCCCTCAC [C,T]
TGACTACAGACTCCATAAAGGCAGAGATTCTATTTTTACTCTATTATTACTGGATGATTAG GCACTAAGCACTAGGATTAATACATAGTAAGTGTTCAACAGATGTTTACTGGATGATTAG ATTGGCATTTTAAGGTAGTCTGAGATCACGTTTTAGACAAGATACTTCAGTTTAGTCCAA TCTTTATTATTTATTAGCTACTAAAGAGAAAATTGATAATTACTCATGGAAAGGCAGTTTTTACAGTCAACTTTGACCACTTTTGAACATTTTGCGAGCCATTTGGGAAAAGGCAGTTT

TACTAAAGAGAAATTGATAATTACTCATGATATTCTTCTTTTTTTGTTTTACAGTCAACTT
TGACCACTTTGAAATTTTTGCGAGCCATTGGGAAAGGCAGTTTTGGGAAGGTGAGAACAAA
TTGAAATGATTAACCACCAGCAGGGTTATGTAGCCCCAGGGAACAGAGGTCCAGAAATGT
TCACATTATTGAGTTGCTGGGACCACAAGGAAAGATAATTAAGTGAAAAATGTTTTTTGTAA
TGGATTTTTATAAAAATTGTCACCACAGTTTAAGAAAAGCGTGTGACAGGCAGCTACATAA

[T,C]
GAACATATACTGTTGTCAGAATAATCTCATTAAACTCAAATCTGTTTACTCTCAGTAAAC
TTTAAGGCTTTTCTCTCTCACCCTAAAGGAGATGAAGATTTCAGAATCATTTTCAGATTCT
ACCAGCTGTATGCCCAGTAATAGTTATCTTGTTTATGGAAGAGTTACTTATTTTCATGTG
GGAAAGAAGTCATCCGATTTCTATTTGTTTCCTCATTTGTCTAATGTTTTTATCTTAAGA
AAAATACATATTCAGTTTAATTTTTTTTTGCAAGAAACCTTCTGTATTCAAACCCTGATTAC

TATCTTGTTTATGGAAGAGTTACTTATTTTCATGTGGGAAAGAAGTCATCCGATTTCTAT

FIGURE 3PPP

- TTGCTGGGACCACAGGAAAGATAATTAAGTGAAAATGTTTTTGTAATGGATTTTTATAA
 AATTGTCACCACAGTTTAAGAAAAGCGTGTGACAGGCAGCTACATAATGAACATATACTG
 TTGTCAGAATAATCTCATTAAACTCAAATCTGTTTACTCTCAGTAAACTTTAAGGCTTTT
 CTCTCTACCCTAAAGGAGATGAAGATTTCAGAATCATTTTCAGATTCTACCAGCTGTATG
 CCCAGTAATAGTTATCTTGTTTATGGAAGAGTTACTTATTTTCATGTGGGAAAGAAGTCA
 [T,C]
 CCGATTTCTATTTGTTTCCTCATTTGTCTAATGTTTTTATCTTAAGAAAAAATACATATTC
 AGTTTAATTTTTTTTGCAAGAAACTTCTGTATTCAAACCCTGATTACTAGTTTCTCAATG
 GAGACGTACTTTAAGAGAAATATTTCATATAAAACTTGCATTTTAAAATCATTTTCTG
 TTTACTTTTTCAGGCATTATACAGACCTCTAAAGAAATTTCAAAAACATGGACATCATAT
 TTAGTGTTTTTCCAGTCCTTAAAGTCCTTTTTGGTTATATCATGTATGGGTTGTAAACCAG
- GAATAATCTCATTAAACTCAAATCTGTTTACTCTCAGTAAACTTTAAGGCTTTTCTCTCT
 ACCCTAAAGGAGATGAAGATTTCAGAATCATTTTCAGATTCTACCAGCTGTATGCCCAGT
 AATAGTTATCTTGTTTATGGAAGAGTTACTTATTTTCATGTGGGAAAGAAGTCATCCGAT
 TTCTATTTGTTTCCTCATTTGTCTAATGTTTTTATCTTAAGAAAAAATACATATTCAGTTT
 AATTTTTTTTGCAAGAAACTTCTGTATTCAAAACCCTGATTACTAGTTTCTCAATGGAGAC
 [G,A]
 TACTTTAAGAGAATAATATTTCATATAAAACTTGCATTTTAAAATCATTTTCTGTTTACT
 TTTTCAGGCATTATACAGACCTCTAAAGAAATTTCAAAAACATGGACATCATATTTAGTG
 TTTTTCCAGTCCTTAAAGTCCTTTTTGGTTATATCATGTATGGGTTGTAAACAGAAATTC
 TTTTGCACAGTATTATTCAGCTTGACAGTCATGTCTATTTCAGTCACTCAAAGCAG
 GATTAAGGATGTTACTTGTTATTGGAATATTCCTGACATGGAGGCAGCTATTTTCACCAA

FIGURE 3QQQ

AAAATGGGTATTGTGAGGCTTTAAGCTGGCCAAAGATGATAGATTTTGCTGTTTGCTAAT
TTGGTGTCATTCCAGACAACATTCTGTTCTCCATGCATACTGACCTGGTGATAACATGAC
ATATAACCTATTCTTTCCTTCTCACTTCTCACATTGAACCTCACAGTGGAACACTAGGCA
TCATTAACAATGATAGAAAGAAGAGAGAGGAGACTTACCTCCACCCAGTGATTCTGGTACTA
CATTCAAAACTAGAAACTAACTGGGAGGGGGAATTCTTAAAGTACAACAGCAACTCCCTT
[T,G]
GTCTTCCAAACCATGAGAAAAATCTTCACAAATCTGTATCATTCTTCCACATTTATAAACCAT

TTTGTTTTAGTAAGTACAATATATTCACAAATCTGTATCATTCTTCCTAATAAATGCTT
TTTGTTTTTAGTAAGTACAATATATTCAATGTAAGTTTATCTTTCCACATTTATAAATGCTT
CTTGCAGTGCTTTTTGAAGGTGTGATTGTGAGTGTATTAGTCAGTTCTCACATTTATAAACCAT
AGAAATACCTGAGACTGGGTAATTTTTAAAGAAAAAGAAGTTTAAGTGGCTCATGGTTCTG
CAGGCTGTGCAGGAAGCATAGTGGCTTCTGCTTTTGGGGAAGGACTCAGGAAGCTTCCAATC

TTGATTCCCCAGGTGGCTTTTGTTAATTGAGATTAAACCTGTAGCTGCACACAACTCCTC
AGGGCCTCTATCTCTTTACTCATGTCTTTGTCCCTGTGGATAGAAGGGGTCCACATGTGG
TTTCAGGAAATTAGGACACCAGATCATCTGTTTTAACTGGAAAGAACTACCTGTACTGAG
AGTGTGACAAGGTCCTTTCAGACTCTGAACATAGCCCCAATAAATGGTATCAACCTTAAAT
AACGAGATTCTGAAAAATATGATTAAGTATCGAGTTTGCTGGAGCCCCAGAGCTTGAGGATG

[C,G]
CCACCTGGGAGCACAGATTCACTTTGCCCAGAATGTACACTCCAATTAGCAGCAGTTATA
AGTGGGGTTTTAAGAAAAAAAGACAAGGCAGTTCCTAAGTTATTTACCAAAAATTTACAT
TAAAATAATGTAAGCTATTGATGGACTATGCATTATTCTTTATATCACAAAATTACAGGAA
CACAAAGATAATGGGTGAGGCAGCTAGTCAGGAACAAAATGGCTTTAAAATACTGTCCTT
GAGCATGGGTTTGAGGCTGACTGACATCCCATACTCATGTTTCTCTAAACCTAATAAA

GGAAAGAACTACCTGTACTGAGAGTGTGACAAGGTCCTTTCAGACTCTGAACATAGCCCA ATAAATGGTATCAACCTTAAATAACGAGATTCTGAAAATATGATTAAGTATCGAGTTTGC

FIGURE 3RRR

TGTGGATGAACTTAAGCAGTTTTGGCTCCTTTTATGTTCAGGAACTTAGTCCTGCATTGC

53140 TCATGTTTCTCTAAACCTAATAAATTGTGCATATCTCATATAGCTCAGACTGCTCTGAGC TGAACTTAAGCAGTTTTGGCTCCTTTTATGTTCAGGAACTTAGTCCTGCATTGCTAGGAA GTCTTATTCCCAGATGGTCCTGTCCCACATTTGGGGGAAAGGGAAAGGATGAGTCTTAGT [G.A] GGGATTTTAACACCATCAGAAGCAAAATTGGGATGGCATCGCAGGGTGCCACAAATGAGA CCTCACCCAAGTCACTAATTTATGTAGCTACTGTTGCTTGTGGGATCATCTCCAGGCTTC AGAATACCATGCAGTTAGTTTTCTCGGAATAAGTAAAACAATGAGCTATACATAGTAGAA AAAATATCTATTCCATTGGAAAGTCAACTAAAAACATCATGAAGAAAAATTAAAATCCAGT 53848 AAGATAAATGTTATCAGGACCAACATACTTGTAAAATAAGCTTTAGTATTATATTTGGCC TAATTATTTGCATTAAGTGCAACAAAAATAATGAATGGCCATGTACGCATTTTTAAGTTG GCTTTGCTGGAACTTTTTCATAAGGAATCTCAGATTAGACTTTTAAAAAGCCTCTCTAAAC TAGATATTGAAGCCAATAATTCACCATCAAACTGCCTGTAGCATCTACATAAATTGGGTG [A,T]ATTTCTCCCTTCTTCAGGTTCTGAAATATATTGAGGTTTCTAGGCCTGTCAAATGATGAC ATTCTTTACTTACTGCAAGGTCAAAAAACTTGTGAGGGTACCATGTAGACAAGGTATCAG GTCAGTTTTCCAAAAGGACTATTGATTTGGCTCTATAAAGTCAACTTCAATTCATCAAAG CAGTTTGGTCATATCTGAAAGTATGTCATTTCACCCAAAGCCTTGGTAAAATGACCAGCC TTAGTAAAATGACCAGTGTCTCCAACTGTGTACTGTTACAGAAGAAAAACAGGTTCTTACT TATGTGAACTAAAAGGGATTTGAGTTATTTTCTATTTTTCTGATAAAAATATTTAAGTGTT 57636 TCCTTTCTCTTTTGGCCAATTAGAACTCATTCATATATTTTTGTAATAAATTTTACATAC ACATGACACATATAAACATGCAGACACACACAGGCAGATTTTATAGCTTTGTAAGTTTCT TCATTTGCCAGTTTTCAATAGTTTCTCTCCCACCTTTAGACTGTCAAGCCCCTAAACAATT GTTAGCTAGGCAACCTTAAATTTGTACTTCTAAAGGGATGACTCTTAGCTGAAACAAAGT [-,A]AAAAAAAATAAAAATTACACTTCAAAAAACACAGAGCGGAGCTCAAACTAAGGGAGCAGGT GTATATAGGTAAAGGTCCAGTTAAGACAAGATGGCCAAGGAAAGCATCTTAAGTAAAGGT AGGACTTGTATAGATTTAAACCAATGTTAAATTTCTCATGACTCAGCTCTCCCTCTCCTC CAGGTGCACAGAGGCAGAAACCCTTACAAATGGAGATTTCCTTTATCAATGTAAATTTCA ATATAGCCAGCTAAATGCCAGCAAGGTATATTTTTGGAGAACTGTTAGAGGCAGTGAATCT GTTTCCTTTTTGGCCAATTAGAACTCATTCATATATTTTTGTAATAAATTTTACA 57693 TACACATGACACATATAAACATGCAGACACACACAGGCAGATTTTATAGCTTTGTAAGTT TCTTCATTTGCCAGTTTTCAATAGTTTCTCTCCCACCTTTAGACTGTCAAGCCCTAAACA ATTGTTAGCTAGGCAACCTTAAATTTGTACTTCTAAAGGGATGACTCTTAGCTGAAACAA AGTAAAAAAAAAATTACACTTCAAAAACACAGAGCGGAGCTCAAACTAAGGGAGC [A,T] GGTGTATATAGGTAAAGGTCCAGTTAAGACAAGATGGCCAAGGAAAGCATCTTAAGTAAA **GGTAGGACTTGTATAGATTTAAACCAATGTTAAATTTCTCATGACTCAGCTCTCCCTCTC** CTCCAGGTGCACAGAGGCAGAAACCCTTACAAATGGAGATTTCCTTTATCAATGTAAATT TCAATATAGCCAGCTAAATGCCAGCAAGGTATATTTTGGAGAACTGTTAGAGGCAGTGAA TCTGTATGTGTCTGCAGCAACTTCAATTCTTGCCTACTCTCAAAATAAAAAAATTCAACTG GAAGTTATGTGCATGCTTACTTGAGGCATCTTTTTTTCCTTACCAGTTGACTGTTCCTAG 58585 AGGAAGGTCATATACCAGTTAAACTCTACCATTTTTGCCTCTTAGTGTGCATGCTTGAGC CTACTCGCCCACCTCCTGAGATCTTATCAGGAACCTACTGATCATCAGTTTCAGGGTTTT TCTATCTACTGGGAGATTGCCTTTTCCTGGCGCCGGCTGCAACCAAATATTATTTGAGAG AGACAGTTTAACAACCACCTGACCATCACCTAATGGTTGTCTGACATTCCTTGGTGGAGG [T,C] TGGGGTGATCTCCTGCCTTGCCCATGTCTGCCTGCCTACTGTAACAGACCAACTTAGTT GCTCTTTAATGAACAGGGCAAAGAAAGCCTTCTCTATGCCTGGACTCGGCATGGACAGCT CTGGGAAAGAAGCCTATTTTACCTGAGGGCCTATCTTTTATAAATATTTTGTTCAA

ATTCTTTCTTTTAAAACAAAGGTTCTTTTTCAATGACTTACCAAACCAATACACCTTAAC

Docket No.: CL001160DIV II Serial No.: TO BE ASSIGNED Inventors: Jane Ye et al.

Title: ISOLATED HUMAN KINASE ... AGGTCATATACCAGTTAAACTCTACCATTTTTTGCCTCTTAGTGTGCATGCTTGAGCCTAC 58649 TCGCCCACCTCCTGAGATCTTATCAGGAACCTACTGATCATCAGTTTTCAGGGTTTTTCTA AGTTTAACAACCACCTGACCATCACCTAATGGTTGTCTGACATTCCTTGGTGGAGGTTGG GGGTGATCTCCTGCCTTGCCCATGTCTGCCTGCCTACTGTAACAGACCAACTTAGTTAAA [T,C] TTTAATGAACAGGCCAAAGAAAGCCTTCTCTATGCCTGGACTCGGCATGGACAGCTCTGG GAAAGAAGAAAGCCTATTTTACCTGAGGGCCTATCTTTTATAAATATTTTTGTTCAAATTC TTTCTTTTAAAACAAAGGTTCTTTTTCAATGACTTACCAAACCAATACACCTTAACCAAG GTTATGTCTAAACCAAGGATCAACTAGGCATTTCCAAAGAGTGGCAAAGTAGTCCTCACA GGTGGCCTTCAGAGCCACAGCATCAACAATATTAACTTCCCTATTAGTAGTGTTCTATTA 62188 CTTTGGGTTTTACATATATTATCTCATTTATTCATCATAACAACCTGGTTGATAGGGATT ATTATTCCCATTCTATTCCTGAAGAAACTGAGGCTCAAAGGAGCTAAAATATTTTCCTAT AGTCACACAGCTAGGAAGTGGCAGAGCGAGGACTCAAACCCAAGAATCCTGACTTCAAAG CCTCTGCTCTTCCTGCACTATACCATCCCTATACACATCTCTGAGACTCCTGTAAAA [A,T]TATGTAAGGAACAGGATTTATTTCATTTATTGTCTTTCATATCCCACAAGAATACAAACT GTGTAAGGCAGGTATGTCTGTATGTTTTTTTATCACTGCCTCATTCCCCCATCTTCCACAAC TGTGTTAGTGTTAGGGCTAAGGCCTTTGGCTTCTGGTTAATTGCCCTTTTTTGCCATTATG CCAATGTCATTTGCACACACACACACATACCCTCATATAATCATATGCACTTCAGTTTCT CATCTCAAGATATGTCAAATAAGTGTATTTGGGGTGAAATATTTTTGGTTTCCTTTGCTA 63478 [G,A]

GAAATGAAATGTCCCTGCTTCCCCATAGCCAGAAAAGATTCTTGAGTGGACAACTGCACC TAAACTTGAACCTGAGCACTAGAAAGTCTTTTGTTTTATTCTATGTTTTTATAAATTTAA ATCTAATTTTTGAATATAAAATAATACATATTTTGTAAATGTGGAAACACAGAAAGTTC TAATGAAAAAATAAAAACCTGTATTTCATCACGCAGAAATATCTGCTGTATTAGTTTTCC TTGCTGCGGTAACAAATTGCCACAAACCTGGTGGCTTGAGACATCATAGATTTAGTATCT TACAATTCTGGAAGTCAGAAGTCCAAAATCAGTCTCCCTAGGCTAAAATCAATGTGTCAC CAGGGCTGTGTTTCTTCCAGAGCCTCCAGGTGAGAATCTGTTTCATTATCTTTTCTAGCT ATACTATCTTCAAACCTCTCTGACTCTGACTTCATGTTCTCCTTATTCATCTTTTAAG

AACCTTTTTCTTCTGCCATGAGACTAACCCTGGCTTCTTCACGTGCGGGTGGAAGGGTTC 65457 CTAACAGCAACAGCTGACAAACTTAATGAGCAAGCACTTTTTCAGCCTCTGCCACAGTCA CATTTTCTATCCTATTGGCTAAAGTAAATCACGAAGTCAGGCTCAGATTCAAGGGGTGTA GAAATAGGCTCCACTTCTGATGAGTGGCACGGCAAAGTCAACATTGCAAAAAGCCAGGCA GAGATATTACTGTGGCCAGTTTTGCAAACAATCCACCGTAATACATAAAATATGTTTAAG [C.A] AGTCCACAAAATGATCAAGGAAATGGTAGAAACTATAAACACTGCAAGAACTCAGAGCCA CATGATGTTATTGAGTCCTTGTAGTGCTCTGAAAGGGTTCAAGGAAGAAGTTGTTTTGGC ATATGACCCTGATGAACTTGCAAAAGTAGAGAAGAAGGGAGCACAGTTTCTGAAGAAGAA CTTAGTAGAGAAGTGTTATTCTGTGGCCAGTACGCAGTAATTGTTCCACCTAGAGATGTT GACTGACTGATGAACAGGAAGCTGAGTCTTTATAATGCAGATATTCACATATTCACTTTAC

CTGTAAATCCCAGCTACTTGGGAAGCTGAGGCATGAGAATCCCATGAATCCTAGAGGTGG 69947 AGGTTGCAGTGTGCCGAGATCATGGCGCCAATGCACTCCAGGTTGGGCGACAGATCCAGA CGCTGTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAATCTTTGCCTATGCCAACGTGGAGCTA TTCTATCCTGTTTCCTAGAAGCTTCACTGTTTTAGCTTTCACATTTAGATCTACAGTCTA **GGATCAAGTTTTATTTTGTCTTCATATAAATAAGTAATTGACCCTTAGCCATTTGTTGAT** [A,G]AGCTTATACTTTCCTTACGTCACCACAGAACCACATTTGTTATTAATCAAGTCACCATCT ATGTATGGGTTTCCTGACTCTGTTCCATTGATTCATTTGTATACTCTTGCATATTTATCA CTCTGTTTTAATTACTGTAGTTTTATACTGGATTTTCAGTAATTCATCTTTGGATTATGT TGGCTACAGTTGGTTCTTTAAAATTCCATATAAATTTCATAAGTAGCTTTTCAATTTGTA TTTTAAAGCTGCTGGTATGTATATTGGGTACATGGAGTCTATAGATTAATTCAGGGATAA

GAGAATCCCATGAATCCTAGAGGTGGAGGTTGCAGTGTGCCGAGATCATGGCGCCAATGC 69981

- 71994 TTGGAGTTTAATTGGGTGAGGTATTCTCACTGTGACTAAGTTTGATGAATTGAAAAGCGT AGTTGTAGAAAGGAAACTCAAGAAGGAAATTCTTGGGGAAACTTAAAGAATCGTATATAT GCAATGTCACTTTTTAAGACAACTAATATTTTTAAGAATTTACTACTTTTTGAGGTGCTGT ACTAATATATTACATGTATAATTTCATATATCTTCAACTACTAGTTCCTGTAAATAAGTA

TGCTGATGACACGTTCCATTTCTTTCGATAGCCACAAAAACAGGAAGTGATGACAAA

CTGGATTCTAACTCCTGACTCCCAAATTCTCTAAGACCCTCAGCATTAACATATTTTA
TTTTAATGTTATTATATATGTATCATTACTTTTACAACTCTTAAAACCAAACATTTTAAAA
TTAGCTACAACTGCAAAATCAACTTAAAAAATTTCAAAGAGCCATTTAACATGATAAATTA
AAATATTTTAGTAAAACAAAATCACCACTGATACTTTAATATTCTTAGGTCTGAGAAAAA
CCATTATGTCGTATTATTCCTGCGTTCCTGGTAGCGTTTCTACTGCTGGACATCAGAAAT

- TGAGGTATTCTCACTGTGACTAAGTTTGATGAATTGAAAAGCGTAGTTGTAGAAAGGAAA
 CTCAAGAAGGAAATTCTTGGGGAAACTTAAAGAATCGTATATATGCAATGTCACTTTTTA
 AGACAACTAATATTTTTAAGAATTTACTACTTTTGAGGTGCTGTACTAATATATTACATG
 TATAATTTCATATATCTTCAACTACTAGTTCCTGTAAATAAGTATGCTGATGATGACACG
 TTCCATTTCTTTCGATAGCCCACAAAAACAGGAAGTGATGACAAAGCTGGATTCTAACTCC
 [T,C]
 GACTCCCAAATTCTCTAAGACCCTCAGCATTAACATATTTTTATTTTAATGTTATTATA
 TATGTATCATTACTTTTACAACTCTTAAACCAAACATTTTAAAATTAGCTACAACTGCAA
 AATCAACTTAAAAATTTCAAAGAGCCATTTAACATGATAAATTAAAATTTTTAGTAAAA
 CAAAATCACCACTGATACTTTAATATTCTTAGGTCTGAGAAAAAACCATTATGTCGTATTA
 TTCCTGCGTTCCTGGTAGCGTTTCTACTGCTGGACATCAGAAATAGAGAATAGTAGAGACC
- TCTGTAGAAAATAATAAGCAAAATTTCTCCCTTGAGAAGCTTCATAAATTAAATCTCC
 AGAGCCAGTATATGTAAGCCGACAGATTATGAAATATGATTTAATGCTCTGTCCAGAGAA
 AGGTCAGGGCTTCAGAAAAATCATCATAATATCAAGAAAAACTAATCTGCAACCTGTTAT
 ATGATTTTTAAAAAATCACCCCCCATCTTTTTTACTGTGCAAACTGTAGATTTTTGTTTAT
 TTTATTTGAGGCTATAGTTTATGTCTTGAATCACACACATATGAGTATCCTGTGA
 [A,G]
 GTTTTCATGACCCCTGCAATCAAACTTGGGTCCTTCTGTTAGTTTCTATCACAGTATCCT
 TCACTTTTCTTTCACAATTCTTGCCATATTCTATAACTACATATTTGTTTAAATATT
 TGTTTATCTTTTATAGATGATTGGCTTCAGGAAGAGGGAAACCATGTCCTTTTGTTCAGT
 CCTTTATTCTCAGCACCTTGCACAACATGAATATACAAAAAAATATTTGTAAAAATGACCAT
 CGAATGAACAAGTGCTCATTAAGTACCAAGCTATATGCCAGGGGTTGCTGATGGTTAGAA
- 74121 CTCTCACCTCAACCTCTTAAGTAGCTGGGACTACAGGTGCATGCCACTATACTGGCTAAT
 TTAAAAACAGAAGCCAACAAACAAAAAACACACCTTTTTAAGACTGGGTCTCACTATGTT
 GCCCAGGCTGGCCTTGAACTCCTGGCCTCAAGCGATCATCCTGCCTTCCAAAGTGCTACC
 TTCTAGAGTATTGGGATTACAAGCGTGAGTCATCTGCACCAGGCCTGAAGCATTCTGTAA
 TGGAGAAATACCTGGGTGCTATGGAAGGGCAGAGGGGGAAACACAGAGGAGTAACATCTA
 [G,A]

FIGURE 3VVV

TAACAACAACAACAACAAAGATAGATGCATAGAGTTTTTCACTGTTGCACTATTTATAT
TAGCCAAAAACCGGGAAACAACCTGAATATTCATCAAGTGGGGACAGGTTGAGTAATCAT
GTGACATACATAAATTGCAGCACTGCACACTTGAGAAAAGAAGTGAGAAATGTCTCTATT
TCCTAGTGTGGTTTGCTCTCCAGAGTATACTGTTAAGTGAAAAAAAGCACTGTGGCCTCAA
ATTTATCTATAGATTCTATACAATCCCCATCAAAATCTCAGCTGGCTTCTTTGCAGAAAT
[C,T]
CACAAGCTGATCTTAAAATGTGTATAGAAATCCAAGGGACTCAAAATTCAATAAATTCAA
AGACTAGCCAAAACAATCTTGAAAAAAGAAGAGCAAAGTTGGAGGGCTCATACTTTTCAGT
TTCGAAAGTTGTTATGAAGCTACAATAATCAAGATAGGGTGGTCCTGGCATAAGGATAAA
CATGGAACAGAATTGAGCATCTAAAAATAAAGCCTCATATTTCCAGTCAATTGACTTTTA

ACCAGGGTGCCAAGAAATTCAATGGGGGAAGAATTTGTCTTTTCAACAACTGGTGCTGG

FIGURE 3WWW

FIGURE 3XXX

TGTCAGGTGTTTAACTTTGTGCATTTCCTCGTGTGAATGGGAGCGTAGGTCCAGCATCGT

CTTCTGGTGTCAAAAACTATTCAGGTGCATTTCTGTAACCTCTATGCACCTCTCCCCCCA 88843 CCTCCCAGGTGTTATATTTTACAGGCTGTCATACCCTTTTGTACCTCCTGAGGAGTTG TGACATTTGGTGTATAATTAATTCATTTGTCTCCTTTATAAAATTGTGAACTCTGCATGT GACCAGAAGTTCAGGCTTACAAGTAGGAAATATTCAAATATAGGACATTAAATCCAAAGG [C,T]ATACTCTGAGAGCTAAAGAGGATGCTATTAATATTAATAGCACTGGGAAGAGTCAAAAGC CATAAATAATCTAGGCAATTCAGGACCTATGTCAACATCATTAAGGCTTTTCAAGGCAGT GTTTTTTGGTTTTTTTTTTGTAGAGACAGGGTCTCCCTATGTTGCCTAGGCTGGCCT TGAACTCCTGGGCTCAAGCAATCCTCCTGCCTCAGCCTCCCAAAACTCTGGGATTACAGG ATACTGTAATTCTTTTTAAACCTCCTTCTTCAAAAGAATCAGCCCGATTCATGTTGTAC 89700 TTGAATTCAAGATAACAAAACACCTTTTAGTTACTTAGAAAGATTAGATTGTAAAATATG ATCTCCCGGACAAGGAGACCATCTGCATAAAACTGAAGATATAAAATATGTGACTTCC TACTTTTAGATTAAAATCTACATTTTGCCTTTGGACATGGTAGAAGATTCAAAATTACCC [G.A] TAAACAGTCAGCACTACGTGGAAGTAGGAGCAGCAGTAGGCTGCTGTTTGCTTAGGGTTT CCTGGGTACCAGGCTGCTAAGCACTTGTGAGTTATTTCACTCAGTCTTCCCATAGC TCCAGGAGGTTTATGGCACTTTGTCCCCATTTCACCTTCGATGAAACTCTGGTTCTGAAA AATTACTTGCCCAAGTTTGCATGGCTATTAAGTAGGGAAAGCATCATGTTTAGGAAATGC AGAGCTCTTCACCACTCTCCAGCCTGCAGATGCTCAGCATGGCTGCAGCTCTGAGGGGAG AAACAGTCAGCACTACGTGGAAGTAGGAGCAGCAGTAGGCTGCTGTTTGCTTAGGGTTTC 90002 CTGGGTACCAGGCTGCCTAAGCACTTGTGAGTTATTTCACTCAGTCTTCCCATAGCT CCAGGAGGTTTATGGCACTTTGTCCCCATTTCACCTTCGATGAAACTCTGGTTCTGAAAA ATTACTTGCCCAAGTTTGCATGGCTATTAAGTAGGGAAAGCATCATGTTTAGGAAATGCA GAGCTCTTCACCACTCTCCAGCCTGCAGATGCTCAGCATGGCTGCAGCTCTGAGGGGAGC [G,A] CGGGACACCTATGCATGGCCACCTGCCTCAGGCACCCACAGACGAAAGTGGTACATGTGG AACGGACAGACAGACAGCCTAAAATTGGAAGCTAAATTGTGTGAGAAAGACAAGTAC TTCAGAGAAGATAGTGTGGAGTCGCAAAATAAGTTTCATGAGAGCTCATACAGAAAACAG GTAAGAAAGCAAGTCTCATGAGAGCTCTGAGGGGTGTAAATGGGACTTTTAACAGCCAAA TCTAGCCTAGCAAGAGGAGCTCAATGGATGGAAGTCCTCACTTGTTTCCCTGTGTTAACA 90615 TAGAAGGGGGTCTTTTTAAAATTTTGTTTTCACTTCAGCTTTTCTGCCAGAAATGTCTAG TGTAGTGATGTTTTAAAAAAAACCTAAGTATCTGTTTCCGCCACAAATCCCCATTAAGAC ATAAATGGAGTTTTATTTTGTGGATGTTTAAAAAATCCATGGACTTGAACTTTTGGTAGTT [A,G]TTGTTAAAGACACAGGGTTGCATAATAACCATTAAGTTTGAATTGTGCAATTAGACAACT TTCTTATTAGTCAAGAAGTCAAACTTTTTGTGTGAGTACAGCTTGAAAATCAGCTTTAGT TTCCAAAGAATGGCCAGTTTGAAGTATAATATTCTCTTTTTGCTTACTTGAAATCTGCAAA AAAACTCATTACAATCTCTTCTACAGGGTTAGTACTATTCTATTTGTTGATTGCCTCAGC

FIGURE 3YYY

TCCTCTAAAGAAGTTGCACTGCATCACAGTTCCATACCAATTTCTGCTATGACCTTAAAT ATAGCCCTGAACTTCCCTGTCAAGGAAGAAGTGAGGAGGTTTCAACAAGTGATCAGTAAT

GACAGGTGTCTGGGCACAGTCTAGTTGAGTTCTCGGCACAGCTGCCATTAAGATGTCAGC 92558 CAGAACTGGGTTCTCTTCTGGAGGCTGAACTGGGCAAGAATCCACTTCCAAGCTCAGTCA ACTTGAATGATGATATAACATTGTAACATAACTCAGTCACAGAAGTAAGACCATCACA [T,C]CTGCCATGTAATGTCGGTTAGAAACAAACCATGGAACCAGCCCATGCTGAGGGGCTGGAA ATTATGCAAGGGTGTGAACACCAAAAGCTGGGAATCCTGGGGGTCACCGTACACAGTCTG TTCACATTTCCTCTAAAGAAGTTGCACTGCATCACAGTTCCATACCAATTTCTGCTATGA CCTTAAATATAGCCCTGAACTTCCCTGTCAAGGAAGAAGTGAGGAGGTTTCAACAAGTGA TCAGTAATGATTCTTTTATGTCTAAGATTCTAGGATGATTTCCTCTCTCCCCTGGTAGGC AAGCTCAGTCAGAATGTTGGCAGGAGGTATTTCCTTGTGGCTGTAGGACCCATGGTGGCT 92667 AGAGTACACATACTTGAATGATGATATATAACATTGTAACATAACTCAGTCACAGAAGTA GAGGGGCTGGAAATTATGCAAGGGTGTGAACACCAAAAGCTGGGAATCCTGGGGGTCACC [G,A]TACACAGTCTGTTCACATTTCCTCTAAAGAAGTTGCACTGCATCACAGTTCCATACCAAT TTCTGCTATGACCTTAAATATAGCCCTGAACTTCCCTGTCAAGGAAGAAGTGAGGAGGTT TCAACAAGTGATCAGTAATGATTCTTTTATGTCTAAGATTCTAGGATGATTTCCTCTCTG CCCTGGTAGGCTGCTCTTCAAAGTATGACCTCCTCATTGTTTCTCTGCTCTACCACACAC TCATTCCCCTCCAAGAAGGCTGCCCACCTGTAATGACCTGTCTACAGAGCCTGTGATAGT AATGATGATATATATATCATTGTAACATAACTCAGTCACAGAAGTAAGACCATCACATCTGC 92803 CATGTAATGTCGGTTAGAAACAAACCATGGAACCAGCCCATGCTGAGGGGCTGGAAATTA TGCAAGGGTGTGAACACCAAAAGCTGGGAATCCTGGGGGTCACCGTACACAGTCTGTTCA CATTTCCTCTAAAGAAGTTGCACTGCATCACAGTTCCATACCAATTTCTGCTATGACCTT AAATATAGCCCTGAACTTCCCTGTCAAGGAAGAAGTGAGGAGGTTTCAACAAGTGATCAG [A,T]AATGATTCTTTTATGTCTAAGATTCTAGGATGATTTCCTCTCTGCCCTGGTAGGCTGCTC TTCAAAGTATGACCTCCTCATTGTTTCTCTGCTCTACCACACACTCATTCCCCTCCAAGA AGGCTGCCCACCTGTAATGACCTGTCTACAGAGCCTGTGATAGTGACTTGTGATAAATGG CTATTAGCACATTTACCAATCAAGGTCCTGTTTGCAATTCGGTTGTGGGTCAAAATTATG TTTGTTTTAACTGAGGTCTTTAGTTTATTTCAGGCAGAGATCTGGGCTGGAGTGTCACCT TTTGGTAAATCTTCTTTTCAGTAGACCACAAGCCCTTGCAAATGTTCTCTTTTTCTAACT 95079 CTGGTAGCAGAAGGACCACTTGAGCCTCAAAACAAAACGGCAGTGCAGTAATGAGGGTAT ATTACACATTGTGAAAACAGGAGAATCTGCCTTCTTTGTGTTGTATGCATCAAGCAGTTT CAAAAGGGCTTTGCAATTGTGTTTCTCACACAAAGCCACCCATTTGTGAAAACCCATGTG $[\mathsf{A},\mathsf{T}]$ AAAGGCAAAGAGAACTGTCTGTGTACAGGTTAACATTTAACTAGACTGGCAGAGCTTTTA ATAATTTCTATAAGGTTAATGGCTTCGTTAATATGCAACCTGTGATTTGGTCCAAGTTAA ATTITACTTTGCCCAGAATACATTATAATATAAAGCTTAAGCTTTATTCTTTCAGGTTTA GTCATTTAACACATAATATTGATCAATTATGCATGTTGGACACAGAGCTCTGAATAGAGC TTTGAAATATAAAACTATGGTTTTAGTCCTCTTAGAGCTATGATGTTTGGTAGGTTAGGT CTTCTTTTCAGTAGACCACAAGCCCTTGCAAATGTTCTCTTTTTCTAACTCTGGTAGCAG 95089 GTGAAAACAGGAGAATCTGCCTTCTTTGTGTTGTATGCATCAAGCAGTTTCAAAAGGGCT TTGCAATTGTGTTTCTCACACAAAGCCACCCATTTGTGAAAACCCATGTGTAAAGGCAAA [G.A] AGAACTGTCTGTGTACAGGTTAACATTTAACTAGACTGGCAGAGCTTTTAATAATTTCTA TAAGGTTAATGGCTTCGTTAATATGCAACCTGTGATTTGGTCCAAGTTAAATTTTACTTT GCCCAGAATACATTATAATATAAAGCTTAAGCTTTATTCTTTCAGGTTTAGTCATTTAAC ACATAATATTGATCAATTATGCATGTTGGACACAGAGCTCTGAATAGAGCTTTGAAATAT

96495 GGAAGCCACACTGCGATTTTCCAGATAATTGTGAAACAACTACGGGCCATTACAAAACCA TAGGAAATTAGAAGTGAGGAGTAATTTGGAGACTGACAAGCTCTACCTTCATCTAAAGGC

AAAACTATGGTTTTAGTCCTCTTAGAGCTATGATGTTTGGTAGGTTAGGTGAAGTAGACA

AGAATTTCTTCTGCAGTCTCCCTAACAAGGAATCGTTATACCTCAGGGATGGGATAGTCA CTACCACATAAAGTAGTTCATTTTCAGACATGCATAACCTTAGAAAGTTCTTCTCTTGAT TTACAATTAGCCTCATAGTTCTGTTGCTGCCTATTGGAGTTTTACTACGTGTACAGTCAG

[G,A]

4

TCCATTCTTACTGGTCCATGTCCCATTCTGATTTGTGTTTTGTGCCATTTTTAAGTGTTTT GAATATTAACCCTGGTATCAGATAAACATGGAGTCCTGACTTTTTCCATAATCATGAATA ACAGTGGAATAGTTACATCAGATTTGTGTGCCACTGTGGTCCCATCTATGAAATAGGGAT AATAATTGTACCTAGTTCATAAGGTTGTTTGAGGATAGTGTGGAATAAAGTATAAAAAGG

ATAGTGTGGAATAAAGTATAAAAAGGGCTTAGCCTGGTTTCTCAAATATTGCAATAAATG 97070 AAACTTAGCATCATGATGCTGTCACAATGGTTCAATGATAATTGAAAACATCGATTCATC ATTTAGCATCCTCAGCTTATCAGTTTCTCACTATCTAGCTCTTCTTACACTGGACACTTC CTAATTATTCTTTCAATGTTTTCTGGAAGTTAGTTGAATAATTACTGTGCACCAGATACT ACACAGTAGTCCCCCTTGATGCATGAGGGATACATTCAAGACCCCCAGTGGATACCTGAA [T,A]

ACGCAGATATTTCCAAACCCATATATACTATGTTTTTTCCCTTTTGTACATACCTATGGT AAAGTTTGATTCATAGAGTAAGAGATTAACAATAACTAATAATAGAACAATTATAACAAT ATGCAGAGTAAAAGTATGTGAATGCAGTCCCTCTCTCAAAGCATCTGATTGTACCGTACT TACCTATTTTTGAACCACAGTTGACTGTGGGTAAAAAGGAAAACTGCAGATAAGGGGGGA TTACTATACTACGAGTTTTACATGTACCATTTAACTAAATCATTACGACTCTATAAAGTA

99913 CATGCAGGGCTTAGTATTCCAACAATTTGAGAAACCAGGGGGCTGGGATTCATTTT TATGACAAATAGTTACTCGAGCACCTACTTTATTCTTGGGTACTTTTATGAGTCCAGGGG CTGCTGCATTGAACAATACAGAAAAGAAGTCCTTTCACTTAGAACTTACGTCCTAGTGGG GGTTGGGGGTTGAGAGAATGAAGCATTCTTACAAAGAATGTTAAAAAGCGAACT [A,C]

TGGGCAGGAATTGAGGATATGAGTTTTGATGTATAAAGAAAAAGTGACAAGGTCAATAAT TGGTGGTCTTAGTGTGATAGATATGCCAGTTTGGAAATTGTATTGAATAAATGCTAGTCA GGGGCTAGGCTGTAGTTATGAAAAGGAGATGATTAAGGAAGTGAGAATAAGGAAACTATT GGTGTGGGACGGATGAAAAGATTATTGGAGGCAAGTCAAGGAACTGAGAGGCCAGGGTGT

TTAGATGAGACATTGGACTTTTGAGTTATTGCTGAAATGAGTTAAGACTTTGG 102375 GGAATTCCCAGAACTGAGGGTTCCTCCCCATTGTAGACCATATAGGTAGCTTCCAGACGT TGCCAAGGCATTTGTAAACTGTCATGGTGCTAGTGAGAGTGTCTTTTAGCATGCTCATGT ATTATAATTAGTGTATAATGAGCAGTGAGGATGACCAGAGATCACTTTTGTCACCATCTT GGTTTTGGCCAGCTTCTTCACTGCATCTTATTTCTATCAGTGGGGTCTTTGTGACCTGTA [C,T]

CTTGCAAAAACAGTCCTGCTGATTACTAAATTCCTATCTCACCTATTCAAGATGGAGTCA CTCTGGTCTGAATGCCCCTGATAAGAGAATCCACAGTGTTCAATTCTCCCCAGTTGATTC TGAAGCATATCCAGGTTTATTAGCCACTAAGTAAAAATATATTATAGACTACTGTCAATG AAAGAAACATTTTGTAAGTTATTTCATATTTATTTTTACTTGAGAAGACTGAAAAGGTAA AGAAGTGATGCTAAAATTTAGAACTAGAAAATCTCAACTTGCTCTAGTAGGAATTTTAAT

CAGTCCTGCTGATTACTAAATTCCTATCTCACCTATTCAAGATGGAGTCACTCTGGTCTG 102686 AATGCCCCTGATAAGAGAATCCACAGTGTTCAATTCTCCCCAGTTGATTCTGAAGCATAT TTTGTAAGTTATTTCATATTTTATTTTTACTTGAGAAGACTGAAAAGGTAAAGAAGTGATG CTAAAATTTAGAACTAGAAAATCTCAACTTGCTCTAGTAGGAATTTTAATAGAGCACACT [-,A]

AGTITCTTTTCATTTTCTCTCTCCTGGTATGTGAATAAACAACCTTCCATACTGCAATTT ACCCTGTAGTGAATTAGATGTTACCCTATTATATTTTTGGAGAAACTATATAGTTAGAATC TAAGCTTAGATAACTTATTTTTATGTTTACAAATCCACTTTCTCTTATACATTTTTCTTA AATTTTTCTCATATTCTTTCTCTGAATTTGTGGTAAAAATACCCCTTTCCCATTCTATGT CATGGTTCTTTACGAAGCTTTCTCATCCTCTCCATCCCGAGGGAACTATGTCTCATTTAT

AGTCCTGCTGATTACTAAATTCCTATCTCACCTATTCAAGATGGAGTCACTCTGGTCTGA 102687 ATGCCCCTGATAAGAGAATCCACAGTGTTCAATTCTCCCCAGTTGATTCTGAAGCATATC TTGTAAGTTATTTCATATTTATTTTTACTTGAGAAGACTGAAAAGGTAAAGAAGTGATGC

FIGURE 3AAAA

TAAAATTTAGAACTAGAAAATCTCAACTTGCTCTAGTAGGAATTTTAATAGAGCACACTA
[A,C]

GGATTTATTAGAATATCAGGGAAGATCTGCAGGGCACAAAAACTGTATGTTATAAATGTT
AACAGTGTCAATAAGATCTTTGTTATGTCTTTAGAAGGCTGCTAGATGAGGAGAGTCCTA
GATCTTAAAAGGCTCCTTATTCAATTTTTTACAAAAAAGGATTTGCAAGTGGAACTGAAACTC
CAAGTACCATCTATTGCTCATTATTTATTTACCTATTTTTTGAGCCTGATTTTCCTGATCC
CACCTGTGCTCAGGGGGCTAAGAAACACTGGTAATGACCTCTAATTTCAAAGCTCACTGT

106378 CTGATTACACCCTCTAGAATAAGCTTTTGCCCCGTGATGATTAAATGTGTACGATTTCTTC
CTAATATTTATTTTTGTGTATATTTGGGATTTATTAGAATATCAGGGAAGATCTGCAGGGC
ACAAAAACTGTATGTTATAAATGTTAACAGTGTCAATAAGATCTTTGTTATGTCTTTAGA
AGGCTGCTAGATGAGGAGAGTCCTAGATCTTAAAGGCTCCTTATTCAATTTTTACAAAAA
GGATTTGCAAGTGGAACTGAAACTCCAAGTACCATCTATTGCTCATTATTTACCTA
[T,G]

TTTTGAGCCTGATTTTCCTGATCCCACCTGTGCTCAGGGGGGCTAAGAAACACTGGTAATG ACCTCTAATTTCAAAGCTCACTGTCATTACTTATTTATGGACTGTCCAAAAAGATTTTTT CCACTTTCTTCCAATGCCTTATTTCTTCCTTACCTTTACTGCTTCTGACATTTGAAAAACA GGGTCTCTGATTCTCAGAAATGTGAGCAATGGTGAGATTTAGCATGAAGGTGACTTTCTT TAAAATACCAGCTATCCAGAGCTAGGTACAGTGACAGGCAGCCACCTGTAGTATCAGCTACTTG

AGCTTTATCCTCCCTTCAGAGAACAGTGTTTTCATCCCAGGTCTCATCCATGGCTTCACC CTACTTCTATCATTAAGGCATCCTATTCTCCTTCAGTCAACTTCTTCCTCCTCCTCATTT TCTTGGTGACTTGGTCATTGCAGATGAGGAAAAACATGAAGAAATCAATTAATCTTCAAG TTTAACCACCTTTAGAGACTACCCTTGTGAAAGATTAATTGTGTAACAGTGTGGTTAAGA ATGTGACTTCTGGAGCCAGATTGCCTTCATTCAAAACACACTTCACTCATTTCCTAGCCC [C,T]

GAGAGCTTTGACAAGTTGCCTAAACTTTGTCTTAGTTTTTCCAGGGATCAAAAGAATACT TACTTAGAAAAAAAATCTTACTTACAAAAGAAATCTTACAGGGATCAAAAGAATACTTAA TTAGGGTCATTGTAAAGACTGACCTGATACGTGTGAAGTACTTGATGCAATGACTGTCAC AAAGAAATCACTCAATAAAAGTCTAATATTAGTACAATTCTTCTGAGGCAGTCATGGCTT TCTTTCCTTGGAAAGGAAGCTGGGACTGCTTCATCTTGTTTTATGTTTCTTTTTTTCTTATGC

108663 ACTITCCATGTGGAGCTCATATTTGAAGACCTCATTTGCCTTCTCCATCTCCATTTATAA TATTTCATCCCTGATGGGCTGTCGCTTGGGCCTCATGTGGAAATTGTAGCCACTGTGAAG GGTAACCACCTATCTCTCTGGTGCCCCCCTATGCGCATCCCTACAAGTGAGCTGTGTATCA CACCATGCTGCTTACATTTTTATGCAACACGATTCAGTAACAGGCAGAAACTTTTATTCT TACTGACTCATATTCTTTATATTCATCTGAAAAAGATTGACATTTAAAAGGAGCCAATTGTA [C,A]

FIGURE 3BBBB

AATGGGAAATCCACTGTGTGAATATTTCTTGTACATCAGAATTTGCCTTAAAAAATGTTTT
TAACTTAGAGCACATCTGTACTGTTCTCCCCAAATGTCCCATTTACTAGTTCAGAGCAAG
ATGACATTAGGTCTTGGGTGACTCCTGACCCACTATCCTAATGTATATTTTCATTTCCTA
CCAATGTAAGTACCCCATCCAATTCTATCAATACCATAGTGTCTAAAAATTCTTGTATTTT
TCTTATTCAGGAAATGCTACAACCAGAGGAACAGTAATGTCTGCCTGACATATCAGAGAA

TCAGTAACAGGCAGAAACTTTTATTCTTACTGACTCATATTCTTTATATTCATCTGAAAA
GATTGACATTTAAAGGAGCCAATTGTACAATGGGAAATCCACTGTGTGAATATTTCTTGT
ACATCAGAATTTGCCTTAAAAATGTTTTTAACTTAGAGCACATCTGTACTGTTCTCCCCA
AATGTCCCATTTACTAGTTCAGAGCAAGATGACATTAGGTCTTGGGTGACTCCTGACCCA
CTATCCTAATGTATATTTTCATTTCCTACCAATGTAAGTACCCCCATCCAATTCTATCAAT
[A,T]
CCATAGTGTCTAAAATTCTTGTATTTTTTTTTTTTTTTATTCAGGAAATGCTACAACCAGAGGAACA
GTAATGTCTGCCTGACATATCAGAGAAAATGACAATTATGTCATCATCTGTCACTTAGGT

CCATAGTGTCTAAAATTCTTGTATTTTTCTTATTCAGGAAATGCTACAACCAGAGGAACA GTAATGTCTGCCTGACATATCAGAGAAAATGACAATTATGTCATCATCTGTCACTTAGGT TTCTTAATACCATCCTGTTACAAGGAATAGAGGCAAAAACTCAGCGTAGGAGGTGAGAAA AAACTGAGGCTGCCATCTTAACAGCCTTTTCATTGCAGAGTCTCAAAATGTACCAAAAGA TGAAGTGGACAGTGTCCTTTTAAAACAACATACAGTGTAGAATACAGTAACTTATCCCCA

110733 CAACTGACGTGTAATGAGTACTCACCAGAGTTGAGATGTTCTGCTAAGCCAGGCCCTCTT
TTAAAAATGTAATCTCAAACTTTATTAGGTCTCATAATCACCTGGAAGGCTTATTTAAAT
ATTGGCGCCCAACCCACAGAGTTTCTGATTTGTTATAATAGAGTTGAGGGGGGACGGGC
GTAAGAATCTGCATATCTAACAAGTTCCCAGGTGATGCTGATGCTGCTGATCTGGGCACT
ACATTGTAGGAATCAATTGGCTCTAAAACCTTCTCTACCTTCCACTTCTACATGAGCATA
[C,G]
ATAATCTTGTAGCTGAGTCAGCTTGGAAATCTATGCAGACTAAAGTAGACAGTTGCATGT
CTGGCTGCTCATCTGAATCACCTGTGGAATTTGTTTTTTAATACAGATACCTGGCTCT

CTGGCTGCTCATCTGAATCACCTGTGGAAATTTGTTGTTTTTTAAAGTAGACAGTTGCATGT CCTACAAGTCCCACTGAATTGGAGTTTCAGGAACCGAAGCCCAGGCACATGTATTTTGC AAAACTACACTGAAGTTTCTGATAATGACGGATATCAACAATTAAACGCTTACTTCTTGC CAAATGCTGTGCTAAGTCTCCTGTAATCATTCTTTCATTTAATATTTCTAATAACCCTCTT

111546 AGAAAAAGAAAAAACAGAGACAACCTACGCTATGATAAAGTTATTGAAATCAGGCATTGG
TGCCACTCCAGCAAGAATGAGTGGCTACCTTTTTTTTAGATGAGTGCTACCTTTACTTTA
CTGAAATATCATGACATAAACAAAGCCAAAACACTTTCTGCACAAAATAAAATCCTGGTG
ATAAAGGCAGTGGGATTTATGCTTAGCAGCAGGCTGGATACTATCAGGGAGCAGACAAAG
AAGTTTGATACAGGGCTTGTGGACTGTGGGCCCTGGAAGAATCTGATGACATGCCCTCCA
[A,G]

> > FIGURE 3CCCC

TATTAACATATAATTAATGTAGTATATTGTATATAGTACTATTGTTATAGTATATATT GTTCTCACTTCAGAAATTAGCAGACTGAAAGGTTAAGAAACTTGTTGACTGTGAAGCTGG AGACAGTCATAGGGGTCTGATGCCAGAGCCCTAACTCTTAACATGCTGCAGTACTGTCCC

AACATTTATTATTAAACTCTCAACCCCATAAAATAGGTTTTACTATTGTTTAGATTTTAC 118491 AAGTTAAAAAAAATCAGGCCCAGAGAGAGAGAGAAAGTGATGTTTCATAATCACACAGCC AGTGATTGGCAGAGCATGAAATTAAACCCAAGTCTAGAAACATGCCGTGCCTGAGACATG GACGATGATGACAATGATGAAGGTAGAATGTCTGACATTGCTAAGCTCTTCCTAAATG TTAAGCACTGTTGTAACTGCATGCATTGTCATTTAAACTAAAAAACAGTTCTGTGAGGCCA [C,G]

GTATATAGTACTATTGTTATAGTATATTGTTCTCACTTCAGAAATTAGCAGACTGA AAGGTTAAGAAACTTGTTGACTGTGAAGCTGGAGACAGTCATAGGGGGTCTGATGCCAGAG CCCTAACTCTTAACATGCTGCAGTACTGTCCCTTTGTTCATGTCAATAAACATGCCTCTG

TCACTTCAGAAATTAGCAGACTGAAAGGTTAAGAAACTTGTTGACTGTGAAGCTGGAGAC 118888 AGTCATAGGGGTCTGATGCCAGAGCCCTAACTCTTAACATGCTGCAGTACTGTCCCTTTG TTCATGTCAATAAACATGCCTCTGCTAAAATAGAAACCCACTTCTCTTAATCAATTTTTT ATTGTTGAATGTTAGGTTGTTTCTCATTTTGAAATACAGATAGAGCATCCCAAATCCAAA ATGCTCCAAAATCCAAAACATTTTGAACACCAACATGACACTCAAAGGAAATGCTCATTG [A,G]AGTATTTTGGATTGGGGATTTGGGATGGCCAACCAGTATAGTGCAAATATTTCAA

AATCTGAAAAAAAATTGAAATGCAGAACACTTCTGGTCCCAAGTATTTCAAATAGGGG ATACTCAACCTGTACATTTAAATTTGTAGTAAAAATCCTGTTAGCAGAATTATGTCCTGG AACTTAGTTATTTCTTTGTGATAAATTTTCATTCAATAATAATAGTGTATTCTCTTACTG AAAATCACTCAAAGAAAATTTTGTGTTCTCACCACAGAAAACAGTAATGTGGGTAATGTG

GGAGAATCACTTGAGCCCAGGAGGTAGAGGCTGTAGTGAGCCAAGATCATGCCACTGCAC 125444 AACAAAAAACAAGCAAGTTATGTGCTTCCAAAATACAATGATACCATAGCTGTGGGATAG AAACAAGTCCAGAACATATCAAAGCAAATTCTATTATATCTTAAAAACTCGAGAATAATCT [-,A,T]

CTTTGAGTTGTTTGCCCTCTAGATCTACACAGGCATGGGAGCAATCACTCTCATGG CTGGGGATGGGGAGAGGGACTTGCTTAAGTGGCTCTCTACAAAGGCACTACCCACATGG CTCTCTGTGAAGGCTCTGTCTACACAGCTCTGTTGAGTGGTGGTCCTGCCCTTCGAAACA GAGGTGGAGCCAACCCTGCTCCCCAAGCCAGTGCACTCTGGACCTGTAGTGGGAATGGCA GCCCTGATGATCTGGAATCGCCCTCATGATCCTTCTTCCTTTTACTTGAAGGATAGCAC

GATGGGGAGAGGGACTTGCTTAAGTGGCTCTCTACAAAGGCACTACCCACATGGCTCTC 125810 TGTGAAGGCTCTGTCTACACAGCTCTGTTGAGTGGTGGTCCTGCCCTTCGAAACAGAGGT GGAGGCAACCCTGCTCCCCAAGCCAGTGCACTCTGGACCTGTAGTGGGAATGGCAGCCCT GATGATCTGTGAATCGCCCTCATGATCCTTCTTCCTTTTACTTGAAGGATAGCACATGTT CACAGCTGGATAGCATTACGGTCCCAGCCTGTAAAATCCAAGAAGTCTGACAGCCTTTCT

CATAAATTCAAACTGGCAGCATCTGCTAGTATAATCCCATCTTTATTTCTAGCTTCTGTT GTGATAACTACTTGATTGTTCAGCTACACTCTAGTGTGCTCTTCAGAACAGGCTTGCTCA TTTTCTGCAATATGGATAGAAATCTTCAATTTCTGGTTGCTTTTTTGCTTAATTATTTTTT TCCTTCAAAGTTTTGCTTAGAAATCTCCTCGGCTGGCCTGGTGCAGTGGCTCATGCCTAT

AAGTCTGACAGCCTTTCTTCATAAATTCAAACTGGCAGCATCTGCTAGTATAATCCCATC 126092 TTTATTTCTAGCTTCTGTTGTGATAACTACTTGATTGTTCAGCTACACTCTAGTGTGCTC TTCAGAACAGGCTTGCTCATTTTCTGCAATATGGATAGAAATCTTCAATTTCTGGTTGCT TTTTGCTTAATTATTTTTTCTTCAATTCAAACATTCCCTTTAACATTTTACTATAAGCAG ACAGAAGGAACCAAGTTACTCCTTCAAAGTTTTTGCTTAGAAATCTCCTCGGCTGGCCTGG [T.C]

GCAGTGGCTCATGCCTATAATCCCAGCACTTTAGAAGGCTGAGGCGGGCAGATCACCTGA GGTCAGTAATTCGAGTCCAACCTGATCAACATGGAGAAACCCCCATCTGTACTAAAAAATAC AAAATTAGCCGGGCATGGTGGATGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGCA GGAGAATCACTTGAACCTGGGAGGTAGATGTTGCAGTGAGCTGAGAACACAACATTGTAC

FIGURE 3DDDD

127506	CATTCTTTCTGCTGCTGTCAATAGCCCTCTTCTTTGGTCCCACAACACACCATCATGATT
127500	
	TCTGCATTAAAAATGCCATCTCCCAAGTAATTAACCTATTCACAGTAAGAACAGTTGTTA
	GAAGTTGGGGTTATTTCATCATGGTCCAATGGCTTTATCTTGCTCAGGAAATCAAAGATG
	AGTGTTTCTAAAGCAAAAAAAAGGAGGATCTCACAATTGTATCTGTTTCATTCA
	AGGGTCCATTTTACACCCAAACATTCATTAGTTCATTGTTTGT
	[G,A]
	GAAGTCATTGTAGCACTATTTCTTAAGTATATTCAAATTTGGATAAGTTAGTCAAATTGA
	TGTGAAAGGACCACCCTTGTAAGCCAAATGTGTAAGTCCTACATAGGGATATTACCTGTT
	TTTATCTCCTGATGGGCTTTTTTTTTTCAAGTTTCTAAATAAA
	ATACGCTACTCATGATTATATAGGAAAACAGAGAAGAGA
	AGAAACATATCTGCTCTTTCCCACTTCACCCTTAATTTTTTTCTCCCCAGCCAATTTACT
127878	CACCCTTGTAAGCCAAATGTGTAAGTCCTACATAGGGATATTACCTGTTTTTTATCTCCTG
	ATGGCTTTTTTTTCAAGTTTCTAAATAAATCCAGTGAACAAGTAGATACGCTACTC
	ATGATTATATAGGAAAACAGAGAGAGAGAAACATACACTTACTT
	TGCTCTTTCCCACTTCACCCTTAATTTTTTTCTCCCCAGCCAATTTACTCACCTTCTGTG
	GCTGTGCTTCTGTTTAGACCCTTGCTAGCTGCTTCTGGGGTTCAGAGCAATTGTGCTCT
	[G,T]
	CCCTCATCTTTTATGACACACCTAGCAAAACAGAAGCAGAGGAGCGAGTTGAAACAGACA
	AACGACTATCTGTTATTCTTCAAACATGCCTAGGATTGTATTTAACTATCACCTATCTAA
	AAGAGGTATTCTCGCCTGCCTGGAAAGAATTTTTGCTAAGAAAATTGTTTCTCTTCTTCCC
	ATATTATTTTACCTCTATGCTAGTTCCCTGTGATTTGATATGTCAACTTTGACAAATTCA
	TTTTCTAAAGCACAGATATGACCTTTTTTGTTAAGAAAAAGAAACTACTGTTGCTCCCC
120720	
139738	GCTGTGGTTTTTTAATTCATCTCTAAGTATATTCTGATATCTCATGTGATTTCTCTT
	TTTGACTCTTTTTTTAAGAGTTTGTTGTTTAATTTCCACATTTTTTGTGAATTTTCCAGTT
	TTCCTTCTGTTATTGATTCCTACCTTCATTCCAATTATTTCAGTCTTTTTAAATTTTTTG
	ATACCTGTTTTGTGGTTTCCTTCCATGGTTTCCTTTAACTCTGAGCATATTCAAGACGGT
	TGTTTTAAAATCTCACTCTAGAAAGCTCAATGTTTGAGCTTCCTCAGGACAATTTCTATC
	[T,C]
	GTTGATTTTAAGTCTTTGAATGGCAATATTTTCCTGTTTCTTTGTGTGCCTTGTGATTTT
	TTTTCTGTTGCTATTGAAAACTCGACATTTAAATATGATAATGTGGTAACTCTGGAAATC
	AGGTTCCTCCTTTCTTCATGGTTTGCTATTTTTTTGATTGTTGAAGGCTGTAGTTATCCAT
	TGTTTAGCGACTTCTCCAAACAATGTTTGCAGAGATTGTCTGCTTTGTTGTCATCACT
	GAAGTTTCTGTTACTTTAGCCTGTGCTCAGCTAATGTTTTGACTGAGATTTAACACCAAG
140261	CTTTGTTGTCATCACTGAAGTTTCTGTTACTTTAGCCTGTGCTCAGCTAATGTTTTGA
140201	
	CTGAGATTTAACACCAAGAGCATTTTTAAGTTGTTTTTCTTTAATTTAGTGTTCAC
	TTGGTTCCAGTAAACCTTTGAGTGCTTTCCGGAGTTTTGACAAAGTTGGTTTTGACAGTA
	TCTGCTTGTTTTTTGATGTTTCTGTTCAGAGATGGGGCTTGGAACTGCTTACATCAGCA
	TTTTTCTCTAGATTCTTCTAATCTTGTACCCCAGGTTCAAAAATAAAAGGTACTTTGCTT
	[C.T]
	AAAACAAAGAATAGTCTTTCCCAAGAAGAATCAGAAAGATTATGAACTATTTTTCTGA
	TTCTTCACTCTATTTTCTCTCTTTTACATTAAGGCTTTTAAAACATGAGTCAATCTTACC
	TTATTATATTATTAACATGCTCGTTCATTCATTCATTCAT
	TTCCTGCTTTGTTAGGAAATATTTCTGACTAGGTGGTTAATGCTATGGTTAGATACACAA
	AGTGCTGTGGGAATTGCTCACTGGACCTGAGTGAAGGGTTAGGATAGGCTTTCCAGAGGA

FIGURE 3EEEE

TTACTTTCCATTGCACTTCCTGACTCCTAGCCTTTCTTTTCCTTGGCTCTTTTTATGCTC

142613 ACAAGTTGAACATGAACCCTTTAAGGGTAATGGGGTCTGAAGTGTCACACTAAAAGGTCA TCTGCAAGTATGTATTTCATATCTTTGTTTAAATAAAATAGTTACATAGTAGAGGGAAAA AAAATCCATGTGGATTTTGCATTTCACTCAATTATAACCTTGATTTTTAATGCTAAAAAT TATTTTCCTAAAATCTTGGGGTAAAAGTGTTGCTCCAAAGAGCTTTTATCAGATTATGT TTATCCTGTAGCTGCCTGTCCCCTGTGACCGATACTGGAAACCCTCAGGATTACAAATGC [C,T]TCCGTTTGCAAGTAAGAGTGAAATACAGCAGAACTGTGTCTTCTCCTTTGTCTTGTTCCC CATCTCTCTCTGTGCTTTGTATTGTTTCCTCTCCTGTCACCTAAACAGGCACTCTGAAA TAAATGACTGAATGATTTTTTTAAAGAATATTTTCCATCAGAAGAAATTTGGAAGTATT TTGTTGCAGAATTTTAAAACATTTGATCTGGGTCTAATTCTGTCCTGGGACTGGTAATCA 142774 GATTTTTAATGCTAAAAATTATTTTTCCTAAAATCTTGGGGTAAAAGTGTTGCTCCAAAG AGCTTTTATCAGATTATGTTTATCCTGTAGCTGCCTGTCCCCTGTGACCGATACTGGAAA CCCTCAGGATTACAAATGCCTCCGTTTGCAAGTAAGAGTGAAATACAGCAGAACTGTGTC TTCTCCTTTGTCTTCCCCATCTCTCTTCTGTGCTTTGTATTGTTTCCTCTCTGTCA CCTAAACAGGCACTCTGAAAGAAAACTCTCCAGTACTGGAGAACTTAGCATATTCTAATT [C,A]GAAGAAATTTGGAAGTATTTTGTTGCAGAATTTTAAAAACATTTGATCTGGGTCTAATTCT GTCCTGGGACTGGTAATCATCTTTTTTTGAGGCTAAATTTTCTCATTTTGATGAAAAAGT CATCAATAGATGTTGAAAGCTGGACAGTGCAGTGTCAAAGCAAATGCTTTGCATGTCTGC AAGAAAGTCACAAATAAAGAAGGCTCTGCTGACTAAAAGAGAAAGATACTTAATCAACTC 143288 GTCAAAGCAAATGCTTTGCATGTCTGCAAGAAAGTCACAAATAAAGAAGGCTCTGCTGAC TAAAAGAGAAAGATACTTAATCAACTCCAGTACCATTGTTGAGGGGAACATTCTATCAGG ATTCAGTATAGAGAGATATTTTTAGGCTATTCACAAAATCCAGGTAGAACCTCCAAGCTA CATTTACAATAATACTAGCTTTTAGATTAATTGTTGTTTTTTAAATATGTATTAGCCTCT TATACAAATATAAGGAGTTACAAATTATTATTACAATAATCTTGGCTTTCGTGATTGTCC [G,A]ATGTATTTACACGTACCGAGAGCTTTATTTCTCCGTATAGTTTCAAGTTACTGTCTCGTG TCCTTTCATTTCACCTTGCAGGACTCCTTTGAGCATTTCTTACAGGGAAGTTCTAGTGGT ATCAGCCCACTGCCTTCTGGCCTCCAAAGTTTCTGATAAGAAATCTGCCCGTCATCTTAT 145610 TCCCTCCCATGGGGCTGGAGGATGAGGGATGGGTAGCTGCTGCTGCTAAGAGCTTAAG TTGGTCATAATTAACTGCGCTTTGCCACCCAAGCCTTCCCTGAAAGTTGCAAGCTTTCAA TAGACTCCAGAGTTCTAAAATAGTGACATTAGACAGATTCTGCCAGTGCAATCGCTGTCT AGGAGGGGAGACAGATTCCTGGTGCTTCCTGTTTTGCCAGCTTCCCGGAATCTTCTTCAC [A,C]

TAGCATCCATTTTGAAGATACTACTTCTCAATTTGGGGCTATTCATTGAATAGACT GTCACCAGGTTATTGGCTGTTTGAAGATTCTCATTTGTCTGCTAACTATACCTCTATTTT TTTTCTACGTTCACCTGGAAGACATGTCTTCTTCAAGAGCACCTTGACTCTGTCCAGAAG GAGTTCATAATTTTCAACAGAGAAAAGTAAGTAATTCCTGGGAGAACAACAGCCCCAGAA

ATGGTGGCATGTTTCAGCCAGACTTTACTTGCAGAGAAAATATATTTTTAACATTTTAAA

148360 GAAGTGAACAGGCTTGGTGGGGGATTGTTTTCACCTCTTGGCTACTCAGAGTACCTAAAC CTGTCCTTACTTATGGAGAGCATGTGTCACACCAAGATGGCAGTAAGCTGGCAACTGCGA AGACCTGACTGATGCCCATTTGGGAAGCCAGGCAAGTGAAAATGGACCGAAGAAACAGAG ATGGCTGTCTTTTATGCAGGGCTTTTCCATAAAGAGGTTACACTGGGGCAACCAAGTATG TGTAGAAAGCCAGAGCTAAACTTCAGCTTGGCATTCACAGTTTTCTCTTCACTGAGCTAA [T,C]AGGCCCAGAGTTTCGGGCAGAGCTGTGAAATAGTGCTTCTCTAATAGCAACCATATTATT GTTACATAATTAAAAGCCAGCTCTTTTGTTGTTTGTTTGATTCCTTTTTCCCTACAGTTCC CACATCATTTGTCTGTGTTTTTTTCTCCAAACACTATAAACTTGAAGCAATTGC CCTGACTCGATTTCAGAGAAGGGGATG

Chromosome map:

Chromosome 5

FIGURE 3FFFF